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ABSTRACT

In 1985, Maryland became one of 45 states that enacted new and tougher graduation requirements. This document presents findings of a 4-year study that examined the effects of the new requirements on local schools and the students and staff who work in them. Three site visits each were made to five selected high schools. Data collection included: (1) a total of 850 interviews with administrators, staff, teachers, and students; (2) student transcript analysis (a comparison of the cohort of 1986 with that of 1989); (3) school document analysis; and (4) interviews with state Department of Education staff and High School Commission members. Findings indicate that schools varied greatly in their responses to the policy changes. Students in higher academic tracks appeared to benefit more from schooling than did those in the general track, and the student sorting systems did not decrease as a result of the changed requirements. Neither did the new requirements positively affect the existing patterns of student exclusion by race, gender, and academic performance. Finally, the higher education and business communities did not perceive the positive impacts of the new standards. Recommendations are as follows: (1) fully consider local context needs when implementing policy goals; (2) establish information flow that improves and promotes equity; and (3) specifically address at-risk students in the policy. Fifty-one tables and two figures are included. Appendices contain a copy of the high school graduation bylaws; information on research methods and sample sizes; samples of the interview protocols and the transcript coding form; and statistical data. (Contains 104 references.) (LMI)

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MARYLAND'S GRADUATION REQUIREMENTS:

LOCAL EFFECTS OF POLICY REFORM

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March 1991

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MARYLAND'S GRADUATION REQUIREMENTS:

LOCAL EFFECTS OF POLICY REFORM

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March 1991

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EXECUTIVE SUMMARY

During the 1980s, state policymakers across the nation assumed leadership for educational reform. State boards of education and legislatures initiated widespread change, with one of the most widespread being the strengthening of the high school curriculum. To accomplish their goal, policymakers regulated course offerings and course-taking patterns, chiefly by mandating stricter high school graduation requirements. In 1985, Maryland became one of 45 states that enacted new and tougher graduation requirements. Yet, little is known about how local schools responded to this state-mandated reform. Research for Better Schools (RBS) teamed with the Maryland State Department of Education (MSDE) to conduct a four-year study of the effects of the new requirements on local schools and on the students and staff who work in them.

Research Design

Over the past four years, a collaborative research team from MSDE and RBS paid three separate visits to each of five high schools, chosen because they were broadly representative of the Maryland high school experience. Researchers interviewed central office staff and building administrators, guidance counselors, teachers, and students, a total of 850 interviews in all. In addition, they coded and analyzed approximately 1400 student transcripts from the five high schools, comparing course-taking patterns between the class of 1986, which was not affected by the new requirements, and the class of 1989, the first class to graduate under the new requirements. Researchers also collected and analyzed school documents such as course catalogues and master schedules. To add historical perspective to the development and implementation of the policy, the team interviewed Maryland High School Commission members and staff from MSDE.

Findings from the Research

To assess the impact of Maryland's policy initiative on graduation requirements, researchers examined a number of issues. These included local variation in implementing the policy, the student opportunity structure in the school, students and teachers at-risk, key policy participants and their influence on events, and the effects of the policy on students in high school and after graduation. Each of these themes is summarized below, with detailed, supporting data provided in five separate chapters of the report.

1. Local Variation in Response to Policy Changes

There are profound differences in how local schools adopt state policy. All five schools framed the graduation requirements differently, according to their own complex mix of history, local economic conditions, student and community characteristics, as well as specific school conditions such as culture, internal resource allocations, and relationship with the state department. Consequently, each school had the power to shape, alter, buffer, and even ceremonialize unwanted change.

For policymakers to ignore such variation in local response is folly. If the desired outcome is improved local capacity to promote learning, then policymakers must recognize that local systems will respond differentially to centrally defined policies, and that those responses are quite logical given the very different contexts in which they operate. The challenge for policymakers is to adopt policies that can be more responsive to important local differences.

2. Effects on the Student Opportunity Structure

While the new policy was intended to increase standards for all students, the ways in which students are organized for instruction (i.e. placed into tracks) may prevent standards from being raised and give some groups more access to the school's resources than others. Most of the research on high schools portrays a fairly rigid tracking system that keeps students from realizing their full potential. We found that tracks are both less easily defined and more permeable than previous research suggests. Nevertheless, students in more academic tracks benefit more from schooling than do those in the general track. For some students, formal and informal local mechanisms constrain access to scarce resources, whether these be more classes or more rigorous classes. Teachers, especially, are powerful shapers of students' aspirations. Peer culture is another potent influence.

The findings suggest that sorting students and sustaining status systems do not decrease as a result of changes in graduation requirements. Thus, there is a need to establish policies that expand opportunities for all students. Offering more of the same to students who have not done well in the present system will likely do little to help them grow. More creative policies are needed so that all students can flourish.

3. Students and Teachers At-Risk

Despite initial concerns that their departments would be negatively effected by the new graduation requirements, staff reported only minimal negative departmental effects. Non-targeted subject areas did not lose out as a result of increased requirements in other areas. The most obvious losers were school systems with the fewest number of periods per day. In addition, individual teachers experienced negative effects. They reported a loss of professional autonomy and flexibility, and expressed anxiety about how the new requirements will constrain their jobs.

Patterns of student exclusion by race, gender, and academic performance persist despite the new policy's intent to encourage students to take more academic courses. While the new graduation requirements did not exacerbate discrepancies in course-taking by gender, race, or academic ability, they did not positively affect those discrepancies in any meaningful way, either. If the success of the policy reform were to be judged by the degree to which it opened up new opportunities for students that the system has traditionally served least well, then the increase in graduation requirements accomplished little. The data point out the clear need for policymakers to include important equity questions in any evaluation of their reform efforts.

4. Key Policy Participants and Their Influence on Policy

While almost every group that had a hand in policy development or implementation -- state department staff, district administrators, school administrators, and counselors -- claimed to have little or no influence on policy, some groups clearly are viewed as having considerable power over change. For instance, while counselors believe they have little impact on what happens to students, teachers and especially students see counselors as wielding substantial influence on youth. The influence of these groups on policy varied from district to district.

The most important policy implication derived from this finding is the need to create more opportunities for educators to take the lead in shaping the future of our high school youth. Changes are mandated often in the absence of a clear vision of the future and without adequate time to establish and carry out that vision.

5. Policy Effects on Students During High School and Beyond

The graduation requirements were aimed at raising standards for students. Some success in reaching that objective was achieved, at least as perceived by teachers, counselors, administrators, and students. Other positive effects cited were increasing students' exposure to new curricular areas, making their course selections more well-rounded, and causing students to become more thoughtful about their course selections. However, that positive impact was not recognized outside the educational community. Neither admissions staff at community colleges and state universities, nor employers in business and industry knew very much about the changed requirements. These groups did not see much of a change in the type of students that came to them.

This latter finding highlights the need for better articulation between secondary schools and the communities which students eventually enter. With escalating costs and demands for increased accountability, one way to improve the image of secondary education is to publicize more aggressively what schools are doing and establish tighter linkages with receiving communities.

Recommendations

The body of this report makes over 30 recommendations for future policy deliberations. Three broad themes summarize those recommendations:

- Local Context Needs to be More Fully Considered When Implementing Policy Goals
  Schools vary in their capacity to handle change and not all schools in Maryland are able to respond adequately to policy initiatives. Local factors such as history, culture, and resources are important indicators of a school's capacity to deal with policy changes. Effective early implementation of mandated change requires both the state and local educators to pay special attention to important local issues. State policy mandates must acknowledge the inherent variability in local capacity to enhance student opportunities. The state needs to acknowledge that local responses will vary and develop strategies to work with districts in altering those responses that are less desirable. It is most important that the spirit of the policy be achieved, and not just the letter of the mandate.

- Information Flow Needs to Improve and Promote Equity
  Information about the new policy is often disparate and sporadic, particularly among at-risk students. Knowledge about the Certificate of Merit, for instance, is erratically disseminated and inconsistently encouraged. College preparatory students receive the most complete information. Such practices reinforce, either intentionally or unintentionally, existing tracking and labeling systems. Local staff should be trained in the subtle and complex ways in which schools define tracks, the detrimental effects of labeling students, and the importance of information in that process. Information dissemination needs to be systematized to insure that all students have equal access to information.

- At-Risk Students Need to be Addressed Specifically by the Policy
  The complex interaction of socio-economic status, racial or language minority status, and academic performance creates conditions in which certain students are often at-risk of being denied full participation in the educational resources of many schools. The state should offer special incentives to schools and districts, allowing them to explore new curricula and different modes of instructional delivery, in order to promote educational success for students who have not experienced it previously. The state and local systems should formulate policy directed specifically at minority and at-risk students and potential drop-outs. Such policies need to alter the structures and processes in schools that promote continued low participation by those students.

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Keith Kershner and Ullik Rouk took earlier drafts, and with skillful editing advice, made this a more readable report.

TABLE OF CONTENTS

EXECUTIVE SUMMARY
Research Design.. i
Findings from the Research............................... i
Recommendations.. iv

ACKNOWLEDGMENTS.. v

TABLE OF CONTENTS.. vii

LIST OF TABLES AND FIGURES............................... xi

CHAPTER 1: INTRODUCTION
Perspective 1
Research Strategy 2
The Research Sites 3
Setting the Stage: The Development of the Policy......... 7
Outline for Remainder of the Report...................... 16

CHAPTER 2: THE ROLE OF THE STATES IN THE REFORM MOVEMENT OF THE 1980s
Increased Graduation Requirements as One State Initiative.......... 21
The First Wave in Perspective............................ 22
Research on High School Graduation Requirements.......... 23
Research on Tracking..................................... 32
Conclusions.. 36

CHAPTER 3: WHERE'S THE ACTION? LOCAL VARIATION IN RESPONSE TO POLICY CHANGES
Early Responses to Reform................................ 40
Changing Course-Taking Patterns: Students' Experiences... 49
Courses and Curriculum: The Students' Voices............. 65
Departmental Differences: The Master Schedules........... 75
Curricular Change: The Teachers' Views................... 80
Conclusions.. 89

CHAPTER 4: WHO'S WINNING? TRACKS, TRACKING SYSTEMS, AND ACCESS TO RESOURCES
Tracks and Their Rigidity................................ 91
Opportunities and Constraints: The Students' Voices...... 104
Effects on the Tracking System: Teachers' Views.......... 110
Certificate of Merit or Not? The Allocation of a Scarce Resource.......... 112
Conclusions.. 117

CHAPTER 5: WHO'S LOSING? STUDENTS AND TEACHERS AT RISK

Students at Risk: Transcript Profiles.................................. 119
Students at Risk: Teachers' Views...................................... 144
Teachers and Departments At Risk....................................... 154
Conclusions.. 159

CHAPTER 6: WHO'S IN CONTROL? KEY ACTORS AND THEIR INFLUENCE ON POLICY IMPLEMENTATION

State Staff Perspectives... 161
District Administrators' Perspectives.................................. 166
School Administrators' Perspectives.................................... 170
The Counselors' Role in Shaping High School Pathways................... 173

CHAPTER 7: WHAT'S THE BOTTOM LINE? POLICY INTENTIONS AND THE PERCEPTIONS OF EFFECTS

Policy Intentions.. 183
School-Level Perceptions of Policy Effects............................. 186
Community Perceptions of Effects....................................... 191
Conclusions.. 201

CHAPTER 8: IMPLICATIONS OF THE STUDY

Educational Reform in the 1990s.. 203
Challenges for Education in the 1990s.................................. 205
A Final Word... 210

REFERENCES

.... 213

APPENDIX A: MARYLAND STATE BOARD OF EDUCATION HIGH SCHOOL GRADUATION BYLAWS

.... A- 1

APPENDIX B: RESEARCH METHODS

.... B- 1

APPENDIX C: INTERVIEW PROTOCOLS

Protocol C. 1 Maryland Commission on Secondary Education.. C- 1
Protocol C. 2 Maryland State Department............................ C- 2
Protocol C. 3 Central Office Administrator......................... C- 3
Protocol C. 4 Student.. C- 4
Protocol C. 5 Department Head/Teacher.............................. C- 5
Protocol C. 6 Counselor.. C- 6
Protocol C. 7 Building Administrator............................... C- 7
Protocol C. 8 Four Year College and University...................... C- 8
Protocol C. 9 Community College.................................. C- 9
Protocol C.10 Employer.. C-10

APPENDIX D: TRANSCRIPT CODING FORM

.... D- 1

APPENDIX E: SAMPLE SIZES

Table E.1 Track Data by School................................... E- 1
Table E.2 Gender Data by School.................................. E- 2
Table E.3 Race Data by School.................................... E- 3
Table E.4 Academic Performance Data by School.................. E- 4

APPENDIX F: STATISTICALLY NON-SIGNIFICANT RESULTS FROM CHAPTER 5

Table F.1 Total Credits Earned by School & Gender............... F- 1
Table F.2 Percent Advanced Courses Earned by Gender............. F- 2
Table F.3 Fine Arts Credits Earned............................... F- 3
Table F.4 Fine Arts Credits Earned by School & Race............. F- 4
Table F.5 Fine Arts Credits Earned by School & Academic Performance (GPA)........................... F- 5

LIST OF TABLES AND FIGURES

Tables

3. 1 Total Credits Earned by School Pre-Policy 51
3. 2 Total Credits Earned by School Pre- and Post Policy.............. 52
3. 3 Total Credits Attempted by School................................ 53
3. 4 Advanced Credits Earned by School................................ 54
3. 5 Proportion of Courses Failed by School........................... 55
3. 6 Grade Point Average by School.................................... 56
3. 7 Total Math Credits Earned by School.............................. 58
3. 8 Total Fine Arts Credits Earned by School......................... 59
3. 9 Total Practical Arts Credits Earned by School.................... 60
3.10 Average Credits Earned in Science by School 61
3.11 Average Credits Earned in Foreign Language by School............. 62
3.12 Math Track Movement by School & by Year.......................... 64
3.13 FTE Teacher Assignments by School and Department -- Adjusted Change...... 76
3.14 Distribution of Math Courses by School and Level of Difficulty 78
4. 1 Track Movement by Subject Area 93
4. 2 Proportion of Class of 1989 Whose Track Movement Stayed the Same & the Predominant Movement for Those Who Moved 94
4. 3 Mean Number of Credits Earned by School & Track.................. 97
4. 4 Percent of Courses Failed by School & Track...................... 98
4. 5 Mean Number of Math Credits Earned by School & Track............. 100
4. 6 Mean Number of Fine Arts Credits Earned by School & Track........ 101
4. 7 Mean Number of Academic Credits Earned by School & Track......... 102
4. 8 Mean Number of Practical Arts Credits Earned by School & Track... 103
5. 1 Total Credits Earned by School and Race.......................... 122
5. 2 Total Credits Earned by School & Academic Performance (GPA)...... 123
5. 3 Proportion of Advanced Courses by School & Race.................. 125
5. 4 Proportion of Advanced Courses by School & Academic Performance.. 126
5. 5 Percent of Courses Failed by School & Gender..................... 127
5. 6 Percent of Courses Failed by School & Race....................... 129
5. 7 Math Credits Earned by School & Gender........................... 130
5. 8 Math Credits Earned by School & Race............................. 132
5. 9 Math Credits Earned by School & Academic Performance (GPA)....... 133
5.10 Foreign Language Credits Earned by School & Gender............... 134
5.11 Foreign Language Credits Earned by School & Race................. 135

5.12 Foreign Language Credits Earned by School & Academic Performance (GPA) 136
5.13 Total Academic Credits Earned by School & Gender 137
5.14 Total Academic Credits Earned by School & Race 138
5.15 Total Academic Credits Earned by School & Academic Performance (GPA) 139
5.16 Vocational Credits Earned by School & Gender 140
5.17 Vocational Credits Earned by School & Race 141
5.18 Vocational Credits Earned by School & Academic Performance (GPA) 142
B. 1 Student Transcript Sample By School B-15
B. 2 Student and Staff Interview Samples by School B-16
E. 1 Sample Size of Track Data by School .... E- 1
E. 2 Sample Size of Gender Data by School .... E- 2
E. 3 Sample Size of Race Data by School .... E- 3
E. 4 Sample Size of Academic Performance Data by School .... E- 4
F. 1 Total Credits Earned by School & Gender .... F- 1
F. 2 Percent Advanced Courses Earned by Gender .... F- 2
F. 3 Fine Arts Credits Earned by School & Gender .... F- 3
F. 4 Fine Arts Credits Earned by School & Race .... F- 4
F. 5 Fine Arts Credits Earned by School & Academic Performance (GPA) .... F- 5

Figures

1. 1 Assumptions Guiding the Commission 11
1. 2 Comparison of New and Old Maryland High School Graduation Requirements 13

CHAPTER 1:
INTRODUCTION

State policymakers assumed increased leadership for educational reform during the 1980s. One of their most frequent reforms was to strengthen the high school curriculum. Usually, to accomplish this goal, they regulated courses and course-taking patterns by mandating stricter high school graduation requirements. Maryland's State Board of Education enacted new requirements in 1985 (one of 45 states to do so) after three years of deliberations by the Maryland Commission on Secondary Education. Appendix A presents a copy of the bylaw describing these requirements. The State Superintendent of Education appointed the Commission to carefully investigate the nature and character of public high school education. Despite the state's intent to significantly improve student standards with the new requirements, it knows little about how local schools and districts responded to its reform.

Research for Better Schools (RBS) teamed with the Maryland State Department of Education (MSDE) in a four-year study of the effects of the new requirements on students and school staff. Staff at MSDE recognized the likelihood of some slippage taking place between policymakers' valued ideals and the practicalities of local implementation and decided to track the effects of the initiative over time to see if it was having a positive impact on students. This report summarizes these findings and offers recommendations and implications for policymakers and practitioners to consider as they contemplate new reforms for Maryland's high schools.

Perspective

Certainly, there has been plenty of speculation in the literature about what one might expect. Wise (1979) labels the process of state reform by policy mandate as "hyperrationalization"; that is, the application of excessively rationalistic, bureaucratic procedures to complex social phenomena like schooling. From his perspective, the proposed effects (better students) are far too ambitious for the means (increases in course and credit requirements) and therefore, are unachieveable. Others, like Resnick and Resnick (1985) and Serow (1986), argue that even if the proposed effects were more modest, there still would be little chance of achieving them. Historically, state initiated graduation reforms simply have had little, if any, impact. State initiatives often are blunted or diverted as they trickle down to local education agencies (Elmore, 1980; Rossman, Corbett, & Dawson, 1986). Indeed, the most visible effects would likely be unintended or even unexpected (Merton, 1968). For example, stricter graduation requirements are seen as (1) alternatively raising (Glatthorn, 1986; McDill, Natriello, & Pallas, 1986) or lowering the dropout rate (Hamilton, 1986); (2) causing large-scale, costly alterations in the school day and the school year (Toch, 1984); (3) affecting the curriculum in terms of fewer courses offered, more basic -- rather than accelerated -- courses, and diminished curriculum articulation (Bickel, 1986); and (4) possibly eroding teacher morale (Cross, 1987).

This study, conducted collaboratively by MSDE and RBS, addresses some of these issues. The research focuses on: To what extent did the new graduation requirements improve opportunities for students to have a more meaningful high school educational experience, and to what extent did the reform alter the way schools went about their work? More specifically, five key questions drove the research:

(1) What is the local variation in response to the policy change?

(2) How has the policy affected tracks and tracking systems as a form of access to resources?

(3) What impact has the policy had on students and teachers at risk?

(4) How has the policy altered educators' perceptions of their influence over their work?

(5) What was the intent of the policy and how well has that been met as perceived by those outside the secondary education community?

To answer these questions, the research team observed how different schools responded to the reform over time. Their assumption was that implementation would not be uniform across schools (indeed, the most interesting story is local variability and how that variability met local needs). Only about 10 percent of any desired change, in fact, is accounted for by a preferred strategy (e.g. increased course requirements for graduation); the remainder is dependent upon implementation (Allison, 1971). Thus, observing local schools' behavior is the key to understanding the impact of a state reform.

Elmore (1980) describes a strategy of "backward mapping" for understanding local level policy ramifications. Backward mapping questions whether policymakers control the organizational, political, and technological processes that impact implementation and whether their explicit directives, clear statements of administrative responsibilities, and well-defined outcomes really increase the probability that the policy will be successfully implemented. Backward mapping concentrates instead on behaviors at the target level of the implementation process (i.e., the behavior of students and professionals in schools). Much of the research energy in this study was directed at local schools. However, this emphasis did not compel the exclusion of the original policymakers or those who oversaw implementation.

Research Strategy

Over the past four years, a collaborative research team from MSDE and RBS paid three separate visits to each of five high schools, chosen because they were broadly representative of the Maryland high school experience. Researchers interviewed system and building administrators, guidance counselors, teachers, and students, a total of 850 interviews in all. In addition, they analyzed approximately 1400 student transcripts from the five high schools, comparing course-taking patterns between the class of 1986, which was not affected by the new requirements, and the class of 1989, the first class to graduate under the new requirements. Researchers also examined course catalogues, master schedules, and brochures. Finally the team interviewed several Maryland High School Commission members (i.e. the group charged in 1982 with recommending changes in the nature and character of high schools) and staff from MSDE. Appendix B contains a full description of the research methods used in the study. Appendix C presents all the interview protocols, and Appendix D the student transcript coding form.

The Research Sites

This section briefly describes each of the five high schools and their larger district context. Pseudonyms that characterize each school, to protect the confidentiality of respondents. The pseudonyms were chosen to be broadly descriptive of the character of each high school. The five schools are Fast Track, United Nations, Urban, Middle Class, and Rural.

1. Fast Track High School

Fast Track High School is located in a rapidly growing suburb of Baltimore. Once a quiet, self-contained community surrounded by farmland, Fast Track has become a bedroom community for the nearby city. New housing developments have brought an increasingly upwardly mobile population. The average household income across the county increased by 13 percent from 1980 to 1990, holding constant the value of the dollar. In schools, there is high parental pressure for students to succeed and to enroll in college preparatory classes.

Fast Track enrolls nearly 1100 students in grades 9 through 12. Over the past six years enrollments have increased just under 10 percent. Students are predominantly white. The school offers students a menu of over 160 year-long courses. A strong emphasis on academics encourages students to take a rigorous program of studies. This emphasis is illustrated by a teacher initiative to create a cross-disciplinary humanities course (art, social sciences, and history) that qualified under the state's fine arts requirement and was Certificate of Merit eligible.

Parents often apply more pressure on students than does the school. Students spoke of being placed in Certificate of Merit courses because their parents insisted upon it and felt intense pressure to remain there even when they performed poorly. Both the school and the district have clearly embraced the academic rigor to the point that, at least informally, the school has two tracks: one with students who are working toward the Certificate of Merit and one with students who are not.

The county has not required credits or courses beyond the state minimum of 20 for graduation, with the exception of a half credit in health. However, it has been proactive in responding to the new graduation requirements. Committees with representation across staff roles developed curriculum plans with a strong emphasis on the Certificate of Merit option and modified courses to encourage higher-order thinking skills. In the words of one administrator, the curriculum is "more challenging and there is a more coherent set of curriculum guides." The district also has moved to a seven-period day to help students fit additional state requirements into their schedules.

2. United Nations High School

Located just outside Washington, D.C., United Nations High School is part of a large, wealthy school district. The school is located in an area of the county that includes both high and low income housing. It serves a student population of about 2,100 in grades 9 to 12. A significant percentage of students are non-native English speaking children. The school's racial composition is one-third African-American, one-third white, one-sixth Hispanic, and one-sixth Asian. Enrollment has been increasing from a low of 1,850 and is projected to peak at 2,800. Unique to United Nations are its racially and ethnically diverse student population and its variety of special programs offered in the school.

Students choose from more than 430 courses each semester. Special offerings include magnet, vocational, and ESOL programs. The magnet program, which draws students from across the county, focuses on mathematics, computer science, and science and graduated its first class in 1989. Initial enrollments in the program were low, but student demand and enthusiasm for the program is growing. Enrollment has steadily increased: in 1989 there were 72 graduates; by 1992 over 100 are expected. The magnet program offers students a different sequence of courses than in the regular curriculum, at an accelerated pace, and with interdisciplinary breadth. A special research and experimentation seminar explores the interrelatedness of academic disciplines. Magnet students take eight subjects a semester, instead of the more typical seven.

The magnet program dominates the culture of United Nations and sets a tone of elitism among its teachers and students. Teachers and students alike are tracked into this special-admissions, high-powered program so much so that they often have no knowledge of lower-achieving, special needs, or other at-risk youth at the school. Non-magnet students reported being denied access to some magnet courses and feeling excluded.

United Nations also is one of six high schools in the district designated as a vocational minicenter. It offers a variety of vocational programs (e.g. cooperative office education, automotive mechanics, cosmetology) and has, in addition, a vocational support services team to work with special needs students.

The ESOL program is also growing. The program currently enrolls approximately 330 students, more than double the enrollment seven years ago. At the time of the graduation requirements reform, the district had in place a set of graduation requirements stricter than those promulgated by the state; the district required 22 credits for graduation rather than the state's 20 credits. The district did not stipulate the subject matter areas for the additional two credits, leaving them as electives for students.

3. Urban High School

Urban High School is in a large city. It is a comprehensive high school with grades 9 through 12 located in the heart of the metropolitan area. The school's African-American population has steadily increased over the past decade and is currently just under 50 percent. The balance of the population is white. There are just over 1,500 students enrolled at Urban, a significant drop from 2,400 students enrolled 10 years ago. Enrollment has bottomed out and is expected to rise again in 1992. Students enroll in a college preparatory, vocational, or general program of studies, choosing from more than 130 year-long course offerings. Most students enroll in the general and vocational programs.

The overall school budget has suffered cutbacks in recent years. The school has also had to deal with corresponding cuts in staff. Last year the principal was forced to declare seven teaching positions "surplus", and four of these teachers (social studies, science, home economics, and physical education) were moved to district middle and elementary schools. Later in the school year, an additional two business education teachers were moved from the high school. The teacher loss also necessitated rescheduling 600 students, many of whom were placed in second semester classes unrelated to courses they took during the first semester. The average class size at Urban is between 30 and 35 students.

Urban is plagued by low attendance, teen-age pregnancy, drugs and alcohol, and high dropout rates. In 1989-90 the district reported a dropout rate of 31 percent. These factors contribute to an environment where doing enough to "get by" is acceptable and often encouraged. In fact, "getting by" has become the ultimate goal for staff and students in a school where half of the students who started grade 9 do not graduate.

Urban had a Certificate of Merit-type special diploma prior to the state's initiative. Students who graduate with 24 credits, having passed all six credits they are required to take each year, receive a special diploma. This diploma was often mistaken for the Certificate of Merit during interviews because it is more well known.

The city system has other requirements which go beyond state minimums. First, while the state requires one U.S. History and two other unspecified social studies credits, the city system requires one credit of U.S. History, one credit in American Government/ Urban Growth, and one credit in World History. Second, the city requires that students earn three science credits, instead of the two required by the state. These requirements were put into effect the year before the new state requirements. Finally, the city system requires that students earn one foreign language credit, except for those students in business, vocational, and special education programs.

4. Middle Class High School

Middle Class High School is situated in a campus-like setting with a complex of schools: an elementary school, a middle school, a special education school, and a technical school. Middle Class serves grades 9 through 12 and has a student population of approximately 1,150. Over the last six years, enrollments have declined by 18 percent. The minority population in the school is predominately African-American, but only accounts for eight percent of the total student body.

Middle Class offers more than 400 courses per semester in college preparation, business, general, vocational education, and special education programs. Each student takes six subjects per semester. Each course is has a track or "phase" designation, numbered zero through four. Courses designated as phase zero are not differentiated by degree of difficulty (e.g. language arts, music, art, physical education). Phase one courses are intended for students who have difficulty with reading and/or writing; phase two courses are designed for students reading at grade level; phase three courses are college preparatory in nature; and phase four courses are advanced placement.

The district requires students to earn 22 credits in order to graduate. The district prides itself in anticipating requirements set by the state and often sets requirements in advance of the state that go beyond the state minimums. In addition, students can earn one of four Certificates of Program Achievement, but to do so, they must complete 24 credits. Unlike the Certificate of Merit, the Certificates of Program Achievement require no specified grade point average. There are four Certificates of Program Achievement: (1) the Advanced Academic Certificate, which requires students to earn two credits in advanced placement courses and three credits in the same foreign language, is designed for the student interested in pursuing a well-balanced, rigorous program of academic study; (2) the Academic Certificate, which requires that two credits be earned in the same foreign language and advanced placement courses be included in the student's planned program where possible, is designed for the student interested in pursuing a well-designed program of academic study; (3) Specialized Certificates are designed to offer maximum program flexibility for students with unique post-high school goals and/or specialized interests in the areas of art, music, or physical education and health (students must complete a planned program with a minimum of five credits in the major subject area); and (4) the Vocational-Technical Certificate is designed for the student interested in training for a specific career or preparing for specialized vocational-technical training beyond high school.

5. Rural High School

Rural High School sits on the eastern shore of the Chesapeake Bay, in a small, picturesque historic community well-known by tourists and water sport enthusiasts. The county's population of almost 30,000 represents a curious mix of wealthy residents who view the bay as an attractive resource for hobbies and much poorer residents who inescapably rely on the bay -- and the concomitant influx of tourists and hunters -- for their livelihoods. This mix of residents has led to the passage of a property tax cap which places severe limits on the ability of schools to adopt and implement new curricular and instructional programs.

Rural High School is small, with enrollment leveled off at 222 in 1990-91, after enrollment high of 292 in 1985. Three-quarters of the students at Rural are white and the remainder are African-American. The community is fiercely proud of, and loyal to, its school and has successfully fought off several consolidation efforts. Students can choose from approximately 150 course titles and typically take seven full-year courses a year. Courses in the four major academic areas are grouped into three tracks: general, business and college preparation. The school also has programs for both vocational and special education students.

The key to understanding curriculum in this tiny school is that almost every course is a "singleton," as one administrator put it. Few electives are taught. Thus, changing graduation requirements and distinguishing between courses (as with the Certificate of Merit) essentially meant increasing the number of courses offered (particularly in math and fine arts), which in turn meant increasing the number of course preparations for teachers. Additionally, the new requirements solidified curriculum tracking rather than making it more fluid; advanced students taking Certificate of Merit courses stay together the whole day because there is only one Certificate of Merit section in each subject. Interestingly, when the state dropped contemporary issues as a graduation requirement, this county kept the course as a requirement. The county has no additional requirements beyond the state minimum.

Setting the Stage: The Development of the Policy

This section puts the initiative into context by discussing what was happening in the state prior to the formation of the Commission on Secondary Education, and Commission members' varied perspectives about the Commission's formation and operation. In other words, this discussion sets the stage.

1. The State Context Prior to the Commission

The formation of the Commission on Secondary Education followed considerable discussion in the state about the role of the public high school. Some highlights of the many independent efforts throughout the state that eventually brought about the formation of the Commission are summarized below.

In the fall of 1980, local assistant superintendents of instruction formed a committee on secondary school concerns. After several preliminary meetings, in December of 1980 they met to identify the most pressing of these problems, prioritize them, and begin to identify strategies for addressing them.

Local superintendents identified similar concerns. At a retreat in April 1981, they devoted two days to discussion around four issues: (1) goals for high schools in the state; (2) the kind and content of learning that occurs in high school; (3) administrative and organizational structures that best produce learning in high school; and (4) methods to maintain standards of quality in high school programs.

In the fall of 1981, MSDE staff met with a committee of the Maryland Association of Secondary School Principals that was formed to examine similar school concerns. They discussed five major areas: (1) the need to re-examine the credit/four-year requirements for graduation; (2) the need to assure standards for curricular programs; (3) the need for consensus on the mission of the state's secondary schools; (4) the need to review alternative methods for delivering curriculum; and (5) the need for a regular five-year follow-up study of selected Maryland high school students.

To promote continuation of the dialogue, MSDE staff generated a draft table of contents for a revised Maryland High School Administrative Handbook. The handbook was to replace a set of manuals and policies from the early 1960s. In the fall of 1981, both the assistant superintendents' for instruction and the principals' committees offered suggestions to MSDE on the proposed administrative handbook.

In the spring of 1982, the state colleges and universities issued recommendations which included a listing of secondary school courses students must complete to be considered for admission to these higher education institutions. These recommendations had the potential of profoundly affecting the courses college-bound high school students took.

At the March 1982 meeting, the State Board of Education asked the State Superintendent to initiate a three-year examination of the nature and character of secondary education in the state of Maryland.

2. Perspectives on the Impetus for the Commission

Discussions with key policymakers associated with the Commission's work presented a complex portrait of the influences that pushed Maryland toward more aggressive state-initiated reform. One informant acknowledged the larger, national environment, with states taking a more active role in reform, even before the formation of the National Commission on Excellence, as being an important influence:

> Various states had decided to take more hand in the operation of schools and Maryland was one of those. There was general dissatisfaction with high schools. The U. S. Department of Education's "Condition of Education in 1980" had gone into great detail about dropping test scores and other indicators of the problem; there was a general concern about quality and the environment in high schools. It wasn't just that kids were dumb or lazy or not working hard or that the curriculum wasn't strong. There was also something organizationally amiss.

At the same time others pointed out that the state leadership was strongly committed to re-evaluating the organizational structure of Maryland's high schools, and even acknowledged that the status quo had been allowed to continue without question for too long:

> The impetus to our work . . . came from the long-standing concern that I had, and others on the staff had, that there was a persistent need to make sure the organization of the schools and the curriculum of the schools was being reviewed systematically on a periodic basis, just to take into account the changing needs of kids, teachers' issues and so on. Also, when we realized the testing program for Project Basic was going to make an impact on the schools, we thought it was pretty important to take a more comprehensive view of the organization.
>
> It was our feeling that the nature and character of secondary education had not been examined for a very long time. ... A manual written about 30 years ago captured the description of how secondary education ought to be in Maryland and for years it was sort of the Bible and since that moment it has not been revisited. We went about this not with the intention of raising graduation requirements. In fact, I think the charge referred to the nature and character of secondary education and the use of words "nature" and "character" were very deliberate. It was not the commission for high school graduation; it was the commission for the nature and character of secondary education.

Another informant was not able to pinpoint the impetus for reform, but was quick to point out that the larger national concern with education added legitimacy to Maryland's effort and made it easier to get the necessary support. Rather than spending a lot of time arguing about what the problem was, policymakers could focus their energies on finding solutions:

> I suppose my first reaction is that I'm not sure which was the chicken and which was the egg. I think that all the publicity that was coming out with respect to the negatives of public education certainly allowed the Commission, gave it direction. ... The state was taking the position that there should be direction given, and gave it an environment that allowed it to happen. [All the other stuff] kept it moving forward.

On a more local note, a superintendent talked about the positive state environment in which the reform debate took place. According to this superintendent, the structure of educational delivery in Maryland with its small number of districts, made building initial consensus a manageable process.

> I think we have an advantage in Maryland with 24 school districts and 24 superintendents. We meet monthly and we pride ourselves, in anticipating the governor, anticipating the legislatures, and anticipating local fiscal authority... Hornbeck did a good job of having superintendent retreats and having Boyer, Sizer, and Goodlad. We said, these guys all have a point.

3. The Commission and its Work

In the spring of 1982 the State Superintendent of Education, at the request of the Maryland State Board of Education, formed the Maryland Commission on Secondary Education to "initiate a major study on the nature and character of secondary education in Maryland". He also appointed a central steering committee with 23 representatives (9 central office administrators, 4 teachers, 4 university/business representatives, 3 school board members, 2 principals, and 1 MSDE staff) charging them with "examining the philosophy, programs, principles, and standards which provide direction for the Maryland public high schools and making recommendations to me." The Commission had three major tasks.

First, the Commission was charged with developing a mission statement for Maryland high schools that reflected the best available thinking about the goals of secondary education. A number of forums were established to facilitate this process. Second, the Commission was asked to oversee the work of a series of task forces designed to examine critical issues in secondary education. Initially assigned 10 key issues, these task forces were eventually charged with reporting to the full Commission on the following five issues: (1) graduation requirements/diploma; (2) curriculum; (3) student services and activities; (4) instruction/instructional support services; and (5) school administration/climate. Third, the Commission was to structure a process by which exemplary secondary school programs could be identified. The original charge had a three-year timeline according to which the Commission was to complete its work and issue a final report.

Early deliberations centered on building agreement among Commission members about the purpose of Maryland public high schools. Eleven assumptions emerged from these discussions and these guided the thinking of the Commission and its task forces. The assumptions were grouped around three main themes: the public high school as an institution, the adolescent, and the place of the public high school in the education of students (see Figure 1.1).

Figure 1.1: Assumptions Guiding the Commission

Assumptions about the public high school as an institution

1) The concept of the comprehensive high school should be reaffirmed.

2) The public high school has the central responsibility for meeting the educational needs of adolescents.

3) The public high school should shape its programs to provide adolescents with a definable set of learnings.

4) The public high school must have the necessary resources and personnel to function effectively.

Assumptions about adolescents

5) Adolescents need direction in the selection of programs and courses.

6) Adolescents need a healthy, safe environment in which to learn.

7) Adolescents should actively participate in the community of the school.

8) Adolescents need to explore and develop themselves in a microcosm of society.

Assumptions about the place of the public high school in the education of students

9) Public high schools should provide those experiences that will ensure the intellectual development of each student.

10) Public high schools should structure opportunities for the personal development of their students.

11) Public high schools should prepare their students to function as members of society.

After a series of meetings held over several months time, the Commission came to a consensus on a mission statement for Maryland's high schools:

> The mission of the public high school is to challenge and help students to grow intellectually, personally and socially. Graduates should be able and willing to take the first steps into their chosen field of work or study, to act responsibly as citizens, and to enjoy a productive life. (Maryland State Board of Education, 1985)

The majority of the Commission's work was accomplished through its five task forces. The first task force formed had responsiblity for graduation requirements/diploma. This task force was charged in November of 1982 with five tasks: (1) to examine the requirements and standards (e.g. enrollment, credits, competencies) for graduating from a Maryland public high school; (2) to examine the diplomas awarded by MSDE; (3) to investigate modifications that local systems could make to graduation requirements; (4) to examine student grading and reporting practices in the state; and (5) to examine the procedures which govern the transfer of students into Maryland public high schools.

The goal was to have each task force contribute equally to reform deliberations prior to the passage of new bylaws. Thus, the total high school system would have been reviewed. In reality, only the graduation requirements/diploma task force received full consideration by the State Board. The original broad conception of a "major study of the nature and character of secondary education in Maryland" took on a narrower focus on course and credit requirements.

The task force began its deliberations in December of 1982 and recommended changes to the full Commission in September 1983. The full Commission, in turn, presented its modified report to the State Superintendent later that fall. The State Board then acted on many of these recommendations by adopting a new state bylaw on July 29, 1985 (see Appendix A).

5. The New Requirements

Maryland's new requirements, effective for the class of 1989 and subsequent classes, stipulate one additional credit in mathematics, as well as one credit in a fine arts course, and one in a practical arts course. This latter requirement can be fulfilled by earning a credit in either computers, home economics, industrial arts, or vocational arts. A comparison of the new requirements to the previous ones is provided in Figure 1.2.

Figure 1.2: Comparison of New and Old Maryland High School Graduation Requirements

1. MARYLAND HIGH SCHOOL DIPLOMA

NEW	OLD	DIFFERENCE
Credit Requirements:		
English - 4 credits	English - 4 credits	Same
Science - 2 credits	Science - 2 credits	Same
Fine Arts - 1 credit	No credit specified	1 Fine Arts credit added.
Mathematics - 3 credits	Mathematics - 2 credits	1 Mathematics credit added.
Social Studies - 3 credits (1 U.S. History and 2 Unspecified)	Social Studies - 3 credits (1 U.S. History; 1 Contemporary Issues; 1 Unspecified)	Only U.S. History specified.
Physical Education - 1 credit	Physical Education - 1 credit or 2 years physical activity	Physical activity option eliminated.
Computer studies or Industrial Arts Economics or Industrial Arts or Technology Education or Vocational Education - 1 credit	No credit specified	1 credit in Computer Studies or Home Economics or Industrial Arts or Technology Education or Vocational Education added.
Electives - 5 credits	Electives - 8 credits	3 required credits added, thus reducing the number of elective credits.
Total Required Credits:		
20 credits	20 credits	Same total credits but 3 additional specified credits.
Senior Year Credits:		
4 credits earned after the 11th grade	No specified credit requirement after 11th grade	Senior must earn at least four credits during their senior year

NEW	OLD	DIFFERENCE
State Competency Tests:		
Functional Reading, Functional Mathematics, Citizenship Skills, Writing	Functional Reading	All four tests will be phased in for the class of 1989
2. MARYLAND CERTIFICATES		
Certificate of Merit (In addition to the diploma) Effective: Class of 1989	No provision	Provision is made for a certificate in addition to the diploma for graduates who meet certificate stipulations in the graduation requirements bylaw.
Certificate for completion of a more challenging education program.		
Credit Requirements:		
English - 4 credits Science - 3 credits Fine Arts - 1 credit Mathematics - 3 credits Social Studies - 3 credits (1 U.S. History) Physical Education - 1 credit Computer Studies or Home Economics or Industrial Arts or Technology Education or Vocational Education - 1 credit Foreign Language (Level II or above) - 1 credit Electives - 3 credits		
Advanced Courses: 12 credits in advanced courses from the above listing		
Grade Point Average: at least 2.6 (on a 4.0 scale)		

NEW	OLD	DIFFERENCE
Maryland High School Certificate (In lieu of the diploma) Effective: Class of 1986 Certificate for completion of a special education program for students who have been enrolled for at least four years beyond grade 8.	No provision	Provision is made for a certificate in lieu of the diploma for special education students who cannot meet the specified requirements on the IEP and in the graduation requiremen bylaw.

3. OTHER PROVISIONS FOR EARNING CREDIT TOWARD GRADUATION

Summer School	Summer School	Same
Evening School	Evening School	Same
Correspondence Courses	Correspondence Courses	Same
Tutoring	Tutoring	Same
Work Study Programs	Work Study Programs	Same
College Courses	College Courses	Same
	Examination	Credit by examination eliminated.

4. ALTERNATIVES TO FOUR-YEAR ENROLLMENT REQUIREMENT IN A PUBLIC HIGH SCHOOL

Early College Admission Program	Early College Admission Program	Same
Early Admission to Vocational, Technical, or Other Post-Secondary School	Early Admission to Vocational, Technical, or Other Post-Secondary School	Same
	Accelerated Twenty-Credit Program	Graduated in less than four year eliminated.
	Job Entry Training Program	Job entry training eliminated as an alternative to four-year enrollment.
General Educational Development Testing Program	General Educational Development Testing Program	Same
Maryland Adult External High School Diploma Program	No Provision	Maryland Adult External High School Diploma Program is referenced as an alternative approach to earning a diploma in the graduation requirements bylaw.

An additional unique feature of the requirements is the Certificate of Merit option. This option stipulates additional credits (one in a foreign language, a third credit in science), a minimal grade point average of 2.6, and the requirement that 12 of the 20 credits are from advanced level courses. This option requires that all departments -- not just the academic ones -- must select and offer advanced courses that satisfy the Certificate of Merit guidelines. Each local district is free to decide what qualifies as an advanced course.

Outline for Remainder of the Report

Chapter 2 provides a detailed literature review of conceptual and empirical research that influenced the design of this study. Researchers reviewed two main bodies of literature: research on graduation requirements and the research on tracking. During the early and mid-1980s, states viewed stricter graduation requirements as a primary policy tool to raise standards and ostensibly increase achievement. The review includes national, single-state, and multiple-state studies. Two patterns emerged from this review. First, schools are offering more academic courses and more students are enrolling in them, but the shift is towards lower-level remedial or basic courses. Second, the pressure of competency testing is forcing schools to offer more remedial courses so that students can pass these tests.

The tracking literature documents the extent to which schools serve a sorting function by classifying students into groups, labelling those groups, conferring status on them, and certifying those statuses to the larger society. The concern in the literature is that through this process certain groups of students may be denied access to educational opportunities. While the evidence about the deleterious effects of tracking is fairly convincing, there is also recent evidence to suggest that tracks are not nearly as tightly defined as some earlier research suggests.

This complex web of past research helps set the stage for this investigation of the effects of changes in Maryland's graduation requirements. By documenting effects at the school level over time and by investigating patterns both before and after the policy was in place, the study captured not only the diversity of responses across schools but also the policy's influence on educational opportunities offered different groups of students. Five key questions emerged from this literature review. They form the basis for data presentations in each of the following chapters. Those five questions are:

(1) What is the local variation in response to the policy change?

(2) How has the policy affected tracks and tracking systems as a form of access to resources?

(3) What impact has the policy had on students and teachers at-risk?

(4) How has the policy altered educators' perceptions of their influence over their work?

(5) What was the intent of the policy and how well has that been met as perceived by those outside the secondary education community?

Chapters 3 through 7 present data that inform each of these questions. In addition, each chapter highlights specific recommendations that derive from the data.

Chapter 3 is the first of the five data chapters and addresses local variation in response to the requirements. The documentation on local variation is organized around five themes. The first theme considers schools' early responses to the policy change as documented in 1986 school interviews. These interviews revealed wide variation in respondents' knowledge about the reforms. The second theme centers on whether students have different experiences as a result of the reform, as documented by course-taking patterns. Dramatic differences in course-taking patterns exist across the five schools. To balance this view of course-taking patterns as documented in transcript records, the third theme addresses students' perspectives on their educational opportunities as gleaned from interviews. The fourth theme describes local differences in response to the new policy as the result of an analysis of school master schedules. Over time, these analyses reveal only minor shifts in the allocation of staff across subject area departments. The final theme complements the departmental analysis by capturing teachers' views of curriculum change as a result of the new graduation policy. This theme highlights the importance of local context in shaping how school people respond to, modify, adapt, and even ignore state-mandated change.

Chapter 4 looks at how tracking systems work in the five schools and whether, given a policy emphasizing the academic track, those systems become rigid and less inclusive or whether they become permeable and permit students more upward mobility. This was accomplished through transcript analyses of student course-taking patterns, as well as through interviews with students and teachers. A couple of surprises emerged from the transcript data. One was student movement across tracks. Students seemed to be taking courses at various levels of difficulty depending on their need, inclination, and course availability. A second surprise was the apparent independence of tracking in the two subjects most associated with rigid tracking, mathematics and science. On the other hand, though, students could easily be categorized as predominately college prep or general, and when these two groups were compared, college prep students used the educational resources of the school in more depth and variety than students in the general track. Student interview data were more dramatic in detailing the deleterious effects of tracking. Formal and informal mechanisms in the five high schools constrained the hopes and aspirations of at least some of the students. Interviews with teachers produced a split vote on whether the new requirements introduced any new effects. An equal number argued that the requirements had both solidified and weakened tracks. Taken as a whole, the data in this chapter suggest that the new graduation requirements did not diminish powerful means for sorting students and for sustaining status systems.

Chapter 5 explores how and to what extent various groups of students and teachers have become more vulnerable because of reform in graduation requirements. These issues are studied by analyzing course-taking patterns according to race, gender, and academic performance, by analyzing interviews with teachers about at-risk students, and by analyzing teachers' perceptions of their own jeopardy. The transcript analyses pose several gloomy findings and only a handful of bright ones. Among gloomy findings were that minority students continued to have limited access to, and participation in, academic resources. On the brighter side, some gaps among race, gender, and academic performance seem to be lessening. Teachers reported a sense of vulnerability and voicelessness in the policy implementation process. A number of them questioned whether they would have jobs in the future or how the new requirements would constrain those jobs.

Chapter 6 describes the influence that people who were involved with the graduation requirements felt they had over school actions. Specifically, the chapter discusses the perceptions of people in different role groups about their impact on students' lives and how the new graduation requirements affected their perceived influence. Four different role groups were studied: state department staff, central office administrators, building administrators, and counselors. State staff felt they had significant potential to influence education in a constructive way. Yet, despite all that potential, there appeared to be significant impediments standing in the way. District administrators offered two perspectives on their influence. On the one hand, they talked about how local systems often moved beyond what the state required; but on the other hand, they expressed concern about limitations of their control once an issue reached their level. Likewise, principals appeared ready to deal with the new requirements, but criticized the state or their own system for not taking full advantage of the opportunity the policy change presented them. Counselors' responses were also two-dimensional. On the one hand they talked about the importance of shaping students' course selections and, by implication, their high school careers. However, they also felt themselves to be "constrained decisionmakers." Students' opinion of counselors' influence was not always flattering, but was less constrained than that perceived by counselors themselves.

Chapter 7 describes the original policy intentions of the graduation requirements, and documents their effects on those within the school systems. The chapter concludes by discussing how college admissions officers and local employers perceive the effects of the new policy. The major intent of the reform was to raise standards for students and provide them with a more well-rounded set of experiences. From a student perspective, the requirements made high school more challenging, but often those who were more challenged were the ones who were already succeeding. School staff reported that students were getting increased exposure to curriculum areas they may have otherwise bypassed and that their education was more well-rounded. However, this positive response was not shared by individuals outside the schools. College staff and local employers saw few positive effects as a result of the increased requirements. They reported little knowledge of the specifics of the requirements and made almost no use of the information about the changes in admission or employment decisions.

Chapter 8 puts the implications of the research findings into perspective, grounding them in discussion of a major reform focus of the day: restructuring. Specifically, the issue addressed in this chapter is how to strike a match between 1990s reform challenges and 1980s policy initiatives, such as increased graduation requirements. Accepting the premise that for educational improvements to take place significant restructuring efforts must be initiated, the report concludes with six challenges for schools and five for state policymakers. The challenges for schools include reorganizing how students are brought together to learn; building more flexible time schedules; altering the role of counselors; infusing the curriculum with higher order thinking and problem solving; making data bases more comprehensive and diverse to better inform decision-making; and enhancing communication within districts and between schools.

The primary challenge for the state is to devise ways to encourage and support local district restructuring along the six lines above. To accomplish this, the state needs to articulate a broad vision for its educational systems; redistribute state funds so that investment is increasingly in the human capital that serves children directly; devise policy mechanisms that allow schools to try creative and flexible time schedules, learning environments, and teaching strategies; build greater capacity to provide districts timely and comprehensive information; and build communication structures that ensure the accurate and thorough flow of information between districts and the state. The call is for the state to move away from the mandated changes of the first wave of reform and to embrace a strategy of capacity-building and system-changing.

CHAPTER 2:
THE ROLE OF THE STATES IN THE REFORM MOVEMENT OF THE 1980s

The decade of the 1980s was an intense period of state involvement in education. Growing concern over the quality of American education found expression in the National Commission on Excellence in Education's A Nation at Risk (1983:5) which described schools as wallowing in a "rising tide of mediocrity." Spurred by such evocative rhetoric, state policymakers initiated a series of reforms. Prodded by the growing awareness that the American economy was no longer pre-eminent in world markets, early reforms targeted student outcomes, curriculum, testing, and standards for teacher training and certification. Taken together, these were efforts to "forcefully repair the sinking vessel" (Hawley, 1988:418) of American education.

The decade-long reform effort is fascinating to observe and describe; however, the interest here is in its beginning -- the "first wave" of the reform movement when states enacted more rules and regulations affecting education in a three-to-four-year period than they had, in total, since the early 1960s (Timar & Kirp, 1989). This flurry of legislative activity has been estimated at over 700 new policies between 1983 and 1985 (Darling-Hammond & Berry, 1988). Much of this activity focused on what has come to be called "student standards." That is, curriculum reform that would establish higher standards for students to achieve in order to graduate from high school. These policies, most often tightening credit requirements for graduation, also addressed competency tests, "pass to play" provisions, and promotional standards.

Increased Graduation Requirements as One State Initiative

One of the most common state level reform initiatives in the early 1980s was tightening high school graduation requirements. The curriculum was thought to be the culprit in many educational woes, and the most common way to strengthen the curriculum was to regulate course offerings and course taking patterns (Clune, 1989). A review of "Clearinghouse Notes," produced by the Education Commission of the States (1990), documents the pervasiveness of this state policy initiative (either through the legislature or the state board of education).

In 1980, 37 states had responsibility for defining minimum graduation requirements. The remaining 13 delegated most or all of that responsibility to local school boards. By 1990, 43 states had assumed the responsibility. Thirty-nine states made some changes in the number of Carnegie units required for graduation. Most of that movement occurred in the first half of the decade, with only four states adding credits between 1985 and 1990. In 1980 the average number of credits that states required for high school graduation was 17.40. By 1985 the average had increased to 19.47, a jump of just over 2 credits. By 1990 that number had taken another small jump to 19.76 credits. A separate analysis of just those states that had control over credit requirements during the entire decade reveals a 3.27 average increase in credit requirements.

Using the 35 states that controlled requirements during the entire period between 1980 and 1990 as a baseline, the evidence is convincing that states attempted to significantly change the number and kinds of courses they required students to take. In nearly all cases (32 of the 35 states), courses requirements were increased in either math or science. In 25 of these 35 states, both math and science requirements increased.

Policymakers did not just pass their reform brushes over traditional academic curricula. Indeed, approximately half of the states instituted new or tightened requirements in either fine arts or practical arts. Missouri was the only state other than Maryland to require a full credit in both fine arts and practical arts.

This first wave of reform has been criticized as being excessively regulatory and limiting the discretion of teachers and administrators (Conley, 1988; Wise, 1988; McNeil, 1988). Teachers found they had little authority to determine what they taught, not only in classrooms but also with regard to the total school curriculum. Myriad regulations emanating from the state capital buffeted administrators (Rossman, Corbett, & Firestone, 1988). And although their voices are not often heard in policy studies, despite their centrality to reform, students found they had fewer choices in high school than did their older brothers and sisters who attended "shopping mall high schools" (Powell, Farrar, & Cohen, 1985).

The First Wave in Perspective

Critics of this first wave of reform charge that, from an organizational perpective, the reform policies do not sufficiently take into account the idiosyncratic nature of schools and variations in local responses to state mandates (Timar, 1989; Metz, 1988; Corbett, Rossman, & Dawson, 1984; Corbett & Rossman, 1989). Sensitivity to local variability, however, is a relatively recent issue for the research community. In fact, what has been called the "first generation" of policy implementation research (McDonnell & Elmore, 1987) took a decidedly state-level perspective, assessing the success or failure of policies using as a criterion fidelity to original intent. Fidelity-to-intent research documented local variation but construed that variation as "noise" in an as-yet imperfect policy system: rationality had not yet uncovered the best mix of variables to ensure smooth implementation. These studies helped shape conventional wisdom that implementation of state mandates was limited, walled-off from the technical core of schools, and that mandates were adapted to local conditions in ways that altered original intent (Berman & McLaughlin, 1975), if not ceremonialized (Meyer & Rowan, 1977).

As early as 1980, Murphy urged a shift away from traditional studies of policymakers' intentions to studies of local variation. Thus, during the last decade, the study of policy implementation developed from a "first generation" assessment of policymakers' intent to variability in local response (McDonnell & Elmore, 1987). Exemplifying second generation research, Timar and Kirp (1989:506) recently described successful implementation as resting on "organizational features of individual schools." They note that "schools shape policies as much as policies shape schools." McDonnell's (1988) work is also representative of this growing perspective. McDonnell found evidence of shirking and minimal compliance in local responses to state policy initatives. She explained this phenomenon in contextual terms: for example, the scope of Florida's mandates encouraged minimal compliance. In Pennsylvania conflicts between coursework requirements and vocational education precluded anything other than a pro forma attention to mandates. As a further example, McLaughlin (1987: 175) describes how "policy effects are complex, sometimes hidden or invisible, often unanticipated or nominalistic...even when they are apparent, they may be transitory."

Supporting the notion that the proof of the policy is in its implementation, Elmore (1980) developed the strategy of "backward mapping," where research begins at the level of implementors and works up through the local district to the state system in search of explanations for the reform as it was eventually implemented in the school.

Another concern stems from the first wave's emphasis on excellence and achievement as opposed to the equity and social justice concerns that were prominent in federal policies of the 1960s and 1970s (Hawley, 1988; Apple, 1988). While some commentators gloss over larger social justice questions in the first wave of reform (see, for example, Murphy, 1989; Finn, 1988), growing evidence from urban and rural centers suggests that educational standards grounded in meritocratic principles may create patterns of injustice by systematically excluding certain students from educational opportunities.

This report addresses the social justice issues inherent in the first wave policies. Frequently cast as a dichotomous choice between equity or excellence, the debate often focuses on creating structures that enhance all students' access to learning while maintaining rigor for the best and the brightest. The research here explores the extent to which Maryland's new graduation requirements enhanced learning opportunities for all students.

Research on High School Graduation Requirements

Historically, high school graduation requirements have been viewed as a minimal set of standards that students must achieve in order to receive a diploma. They are well within a state's legislative purview (although local districts can enact even stricter requirements). In the 1980s, partly as a reaction to the proliferation of courses added to high school curricula in the late 1960s and 1970s, as well as to declining standardized test scores nationally, policymakers implemented the stricter requirements with one goal in mind: to raise standards and thereby increase achievement.

Their assumptions were linked to the growing body of research demonstrating a significant association between increased coursework and student achievement as measured on standardized tests (see Alexander & Pallas, 1984; Schmidt, 1983; Sebring, 1987; Ekstrom, Goertz, & Rock, 1988). In summarizing this research, Goertz (1989) notes the strong consensus that has emerged among researchers that increased coursework is positively associated with increased academic achievement. Thus, the implicit logic in reforming student standards was to boost achievement through stricter and more academically oriented graduation requirements.

Many of these initiatives were announced in 1983 or 1984, making the classes of 1987 or 1988 the first full student cohorts to pass through high school under a new set of requirements. Beginning in those same years, local districts began to assess existing curricula and make necessary revisions, alter staff assignments or recruit new faculty to accommodate newly required coursework, and ensure thorough training for staff who advise students.

Most policy researchers tracking the effects of high school graduation requirements have focused on curriculum reform and its impact on student course-taking patterns. Clearly the intent of the student standards legislation was to alter the academic coursework available to students and, by implication, the overall intellectual tone of students' high school careers. As discussed above, logically, such a policy would then lead to greater achievement.

The bulk of the large-data base research has focused on course offerings and course-taking patterns, and linked these to either school or student characteristics. This body of research can be categorized into (1) pre-reform national profiles of course offerings and course-taking patterns; (2) single-state indepth profiles of both early patterns and assessments of changes; and (3) recent multiple-state assessments of changes. Clearly each major type of research -- national, relying on large data bases, or state-level, relying on multiple sources of school, district, and state-level data -- complements the other, providing a multi-faceted portrait of major educational reform in the 1980s. Each type is considered in turn.

1 Baseline Studies Using National Data Bases

Relying on national, longitudinal data bases such as the High School and Beyond (HS&B) study supported by the National Center for Education Statistics (NCES) and conducted by the Educational Testing Service, policy analysts constructed course-taking patterns among students across the nation. Most of these studies used data gathered in the HS&B First Follow-Up Survey and transript data gathered in 1981-82, before most states initiated curriculum reform. These analyses serve as baseline data for changes that occurred as a result of state-initiated reform.

One topic of high interest in several of the studies was student enrollment in mathematics and science, and whether there was systematic variation by track, race, gender, socio-economic status or other demographic variables. An Analysis of Course Offerings and Enrollments as Related to School Characteristics (West, Miller, & Diodata, 1985a) assessed the availability of, and student participation in, mathematics and science courses, vocational education, and computer science. The analyses were based on the 1982 HS&B Course Offerings and Course Enrollments Survey, the 1982 HS&B Transcripts Survey, the 1980 HS&B Base Year Survey, and the 1982 HS&B First Follow-Up Survey. The data were gathered from over 1,000 public and private secondary schools across the nation, over 18,000 sophomore transcripts, and approximately 30,000 sophomores in the First Follow-Up Survey. Some interesting findings emerged when researchers analyzed course-taking according to school characteristics:

- When minimum competency requirements were present, there were more course offerings in math, science, vocational education, and computer science.
- Advanced mathematics and science offerings decreased when fewer than two-thirds of the students were enrolled in college preparatory programs.
- Schools that had up to one quarter (between 1 and 24 percent) students classified as disadvantaged offered more mathematics, science, vocational education, and computer courses than schools that had none.
- Vocational course enrollments represented 18 percent of all enrollments; mathematics, 10 percent; science, 7 percent; computer science, less than 1 percent.
- Schools with a minimum competency testing requirement had a greater percentage of students enrolled in general mathematics and a lower percentage enrolled in algebra courses and geometry than schools without a minimum competency testing requirement.
- Schools with a higher percentage of students in an academic program (or where at least three-quarters of the students expected to attend college) had higher overall science and computer science enrollments and higher advanced mathematics and science enrollments and lower vocational enrollments than schools without a high percentage of students in academic programs.
- Vocational enrollments were higher in schools where the dropout rate was over 2 percent.

Many of these findings are not surprising. What stands out, however, are the low levels of enrollment in mathematics and science courses relative to vocational courses, and the suggestion that minimal competency testing pushes students towards basic or remedial courses, at least in mathematics.

The patterns also suggest that smaller schools might have more difficulty responding to state mandates that require them to offer more courses overall, and more advanced courses specifically (Firestone, 1989; Timar, 1989). The presence of students of color, non-native English speaking students, and students of poverty seems to press the curriculum towards more varied offerings, especially in mathematics and science.

A second study by the same researchers (West, Miller, & Diodata, 1985b) focused on patterns in course offerings and enrollments as a function of student characteristics. This study found four categories of course-takers in mathematics/science and four in the vocational area:

Mathematics/Science	Vocational
(1) concentrators	(1) concentrators
(2) four-year college bound	(2) limited concentrators
(3) general	(3) samplers
(4) non- or limited participants	(4) non-participants

Some of its more important findings include:

- About one-half of the students took general mathematics or science while less than 10 percent of the students concentrated in mathematics.
- About one-half of the students had a strong vocational orientation (concentrators or limited concentrators); however, participation in vocational education was associated with decreased mathematics and science participation.
- Over one-third of the students defined their programs as general and earned fewer credits in mathematics, humanities, and science than those in vocational programs.
- High SES students were more likely to participate more intensively in mathematics, science, and computer science.
- Low SES students participated more intensively in vocational and general education.
- Race/ethnicity was unrelated to participation in vocational education, while white students participated more intensively in mathematics, science, and computer science.
- No differences were noted in male and female participation in mathematics and computer science.
- Generally, immediate post-graduation plans were not related to course-taking patterns, although the largest differences found were between plans to attend four-year college and plans to work full-time.

2. Single-state Indepth Profiles

Two research studies of single-state reform initiatives are summarized here. Both California and Florida led the movement to make state policies a more significant force in high school students' course selections.

California. The Policy Analysis for California Education (PACE) group has initiated periodic assessments of education in California. One early report, "Curricular Change in California Comprehensive High Schools: 1982-83 to 1984-85," (Grossman, Kirst, Negash, Schmidt-Posner, & Garet, 1985) tracked changes in the course offerings of 20 comprehensive high schools in response to an omnibus educational improvement bill (SB813). Prior to this legislation, which encouraged stricter and more uniform graduation requirements, California had vested full control of graduation requirements in local districts. Thus, legislation targeting the Class of 1987 made few intrusions on local autonomy. Guidelines suggested that students take three years of English, two each of mathematics and science, and three of social studies. In addition, students were urged to take courses in fine arts or foreign language, physical education, and health/driver's education. Locally required academic and non-academic courses, as well as a minimal number of electives, brought the average number of credits to 22 in most districts (McDonnell, 1988).

Based on analyses of course descriptions and master schedules for the 1982-83 and 1984-85 academic years, the study concluded that as a result of tighter curriculum policies, (1) schools offered more courses in academic areas, especially math and science, and (2) by 1984-85 schools offered fewer courses in industrial arts, home economics, and business education. Within mathematics, the more advanced courses (calculus, analytic geometry, trigonometry, and geometry) showed the biggest growth. In addition to more academic courses, schools in the sample offered more advanced placement (AP) courses. AP course offerings grew 34 percent over the two-year period. After adjusting for enrollment changes, this percentage grew to 117 percent.

One explanation for declines in industrial arts and home economics is that students had less time for electives in their programs of study and thus demanded fewer of those courses. These shifts towards more academically oriented curricular offerings and more advanced courses within academic departments pose several policy issues. While the curriculum is focusing on advanced academic courses for college bound students, students in general programs have fewer non-academic electives -- courses in home economics, business education, and industrial arts -- from which to choose. The PACE study asks important questions: What will the erosion of non-academic electives mean for non-college bound students? What are the implications for general students? Are their curricular offerings becoming impoverished? Are students of color or poverty continuing to be excluded from the rich educational resources of upper-level coursework?

Moreover, the growing number of mathematics and science courses comes at a time when teacher shortages are severe, especially in those subjects.

Are increasing numbers of teachers being assigned to teach out-of-field? The PACE report notes that, "As many of the increases have occurred at more advanced levels, for example, in calculus and advanced placement, it becomes even more important to ensure that teachers teaching these courses have sufficient background in, and knowledge of, their subjects" (Grossman, et al., 1985:4). Although McDonnell (1988) found little evidence of out-of-field assignments, the possibility of under-prepared teacher placements should be taken seriously.

Florida. The PACE study was replicated in Florida and the results published in 1989. Sponsored by the Center for Policy Research in Education (CPRE) and based on data available through the Florida Department of Education, Curricular Change in Dade County, 1982-83 to 1986-87: A Replication of the PACE Study (Hanson, 1989) compared course offerings and enrollments in Dade County in 1982-83 and 1986-87. Although not strictly a replication because its analyses rest on districtwide, rather than statewide data, the study is of interest here.

Prior to 1983, Florida had no state-mandated credit requirements for high school graduation; requirements were set locally and varied from 17 to 22 year-long courses. The RAISE Bill (Raise Academic Achievement in Secondary Education) stipulated 24 credits, distributed as follows: four credits in English; three credits in mathematics; three credits in science, two of which must have a laboratory component; one credit each in American and world history; one half a credit each in economics, practical arts education, performing arts education, life management skills, and physical education; and nine elective credits, but not more than two of those credits in remedial and compensatory courses. This latter stipulation was revised by 1985 legislation that increased the number of allowable compensatory courses from two to nine. In addition to legislated changes in high school graduation requirements, schools had to respond to changes in entrance requirements made by Florida state universities. Effective in the fall of 1984, students applying for admission had to have one more English and math course than required by the state for high school graduation, and two foreign language courses. Other changes were stipulated for social studies and natural sciences, effective in 1986.

The largest enrollment increases reported over the four-year span (1982-83 to 1986-87) were in science and foreign languages; small enrollment increases took place in computer education. Meanwhile, vocational and physical education enrollments declined, as did language arts enrollments, albeit modestly. Enrollments remained relatively stable in mathematics and social studies.

Some department shifts did take place. In mathematics, general math and geometry enrollments increased substantially while algebra, computer applications, and "other" enrollments declined. This suggests an internal redistribution towards more basic or remedial courses.

A substantial effect of the reform of graduation requirements was the redistribution of course offerings and staffing patterns across departments within schools. The biggest loser was vocational education, with physical education a close second. Science was called the biggest winner, with foreign language a distant second.

A comparison of the California and Florida studies of curricular change (Grossman et al., 1985; Guthrie et al., 1988), reveals the following similarities and differences:

- Science enrollments increased substantially in both Dade County and California.
- Vocational enrollments declined substantially in both places.
- Math enrollments remained relatively stable, but had substantial internal redistribution.
- Foreign language enrollments increased significantly in both places.
- Social studies remained stable in Dade County and declined slightly in California.
- Art enrollments increased somewhat in Dade County, while moderately declining in California.
- Music enrollments declined substantially in California, but remained stable in Dade County.

When examined in light of the specifications of each state's new requirements, reasons for some of the more subtle differences become clear. For example, Florida stipulated coursework in fine arts. It seems reasonable, then, that overall enrollments in two arts areas would remain stable (music) or increase a bit (art). California's requirements, in contrast, included coursework in fine arts or foreign language, suggesting that enrollments in both art and music might well decline in favor of foreign language coursework, which was required for entrance into the California college and university system. Social studies requirements were similar in both states, and included American and world history, economics, and civics. California also required coursework in geography.

3. Recent Comparisons Across States

The Center for Policy Research in Education (CPRE) conducted several recent cross-state case studies (in addition to the Dade County study discussed above) as part of its research on the implementation and effects of state policies. Two studies by McDonnell and Clune are of particular interest here.

McDonnell (1988) interviewed over 600 policymakers and educators in five states, 19 districts, and 30 high schools. Her interviews produced the following observations:

- Schools reported a 20 to 30 percent increase in the number of sections of any given course for each additional year that the state required that subject.
- Most of the new sections were offered in lower-level classes.
- Increases in course offerings in some subjects led to decreases in others.
- Local response was often minimal compliance and some shirking at the school level. At the same time, districts used the new policies as leverage to standardize curricula far beyond state requirements.
- Messages about the effects of the policy on dropouts and on tracking systems were mixed.
- The most important effects of increased course requirements were due to their interaction with other state policies (e.g. competency tests).

McDonnell concluded the research with a discussion of the different norms that state policymakers and local educators hold for coursework. While principals, counselors, and teachers acknowledge the need for higher standards, she found that their primary concern is to move students through the system, and in so doing, they tailor coursework to individual ability levels, even if it means "watering-down" courses. Policymakers, on the other hand, tend to follow norms concerned with electorate accountability, serving the public welfare, and balancing competing interests. Practioners' and policymakers' norms do not always conflict, but when they do, implementation deviates from expected outcomes.

Clune (1989) collected interview data on the intent and effects of new graduation requirements in six states, 24 districts, and 32 high schools. The sites were chosen to insure significant policy impact and variations in state and local capacity. Much of the data collected by Clune and McDonnell overlapped. Clune's interviews with over 700 eductors led to the following conclusions:

- Typically, the reforms did not affect affluent schools and districts and college preparatory students.
- Four of the 13 intensively studied districts had credit requirements that equalled or exceeded the state's, and almost all districts had some pre-existing requirements that reduced their burden in meeting the new state requirements.
- Most schools added math and science courses. Just over a quarter of the students took an additional math class and a third took an additional science class.

- The new courses were overwhelmingly at the basic, general, or remedial level.

- The requirements did not necessarily increase dropout rates, and concerns still exist about the quality of education offered to at-risk students in order to keep them in school.

- Respondents perceived strong, but mostly uninformed public support for higher standards.

- Perceived disadvantages (fewer electives and vocational offerings) outweighed the most often cited advantage of the new policy intiative -- better college preparation.

- States did not regularly monitor course-taking or compliance with the new requirements.

Clune (1989:47) concluded that reform policies that increased graduation requirements both succeeded and failed:

> They succeeded in getting a lot more students into basic academic courses and in satisfying a concerned public; they failed in getting students into the most rigorous possible courses, in producing a reasonably uniform education for all students, and, probably, in conveying the higher-order skills necessary for a competitive economy.

These more aggressive goals require policies that address the content of courses, target courses for certain groups of students, and offer more technical assistance to schools and teachers.

4. Conclusions from Requirements Studies

Two clear patterns emerge from the national, single state, and multiple state studies. One is the shift in emphases within the high school curriculum: schools are offering more academic courses and more students are enrolling in them, but they are taking lower-level, remedial, or basic courses. This pattern appears most often in mathematics, but is also true in science. Social studies course offerings, however, are declining, as are some fine arts (art and/or music) courses. Most profound are declines in vocational education courses, specifically home economics and industrial arts. A second pattern emerges from the pressure competency and basic skills tests appear to be exerting on course offerings: to ensure that all students pass the required tests, schools offer more remedial courses. Again, this is most striking in mathematics.

The research discussed thus far has documented course-taking patterns among high school students before state reform and comparisons of course-taking patterns before and after reform in a particular state or across a few states. More recent studies gathered multi-faceted data from schools, districts, and states in order to assess implementation issues and on-going patterns of response to state policy changes. One consistent theme in these studies is access to educational resources. Whether assessing participation of students of color and poverty in the academic curriculum, or evaluating the shift from a general and vocationally oriented curriculum to an academic one, the issues of excellence versus equity have been a topmost concern.

Research on Tracking

Equity has been a persistent worry. What is the distribution of student course-taking when analyzed by race, or ethnicity, or language minority status, or poverty level, or gender? Are students of color, poverty, young women, or non-native English speaking students disproportionately in lower status courses or lower status tracks? There is ample evidence that harmful patterns persist. It seems likely that intradepartmental shifts i.e., increasing remedial or basic level mathematics courses, represent a kind of internal re-segregation within the academic track. If disproportionate numbers of students of color and poverty, Spanish-speaking youths, and young women continue to be found in these lower level, but nonetheless "academic" courses, schools have done little to address equity. Requiring all students to take more academic courses and attempting to reduce inter-track differences may have created patterns of intra-track inequities.

We revisit these issues as we discuss internal school organizational processes and try to better understand how students are sorted into various tracks or programs. Supported by recent research on the perverse effects of tracking, this discussion seeks to uncover the frequently tacit processes by which students are sorted, learn to lower their expectations, and thus are persistently excluded from the full range of educational choices.

Schools have traditionally served a sorting function. As people-processing organizations, they receive students who undergo some experiences over a period of years and then leave the organization having received certain educational benefits that prepare them for a particular future. In sorting its clients into groups, labelling those groups, conferring on them certain statuses, and certifying those statuses to the larger society, schools are powerful mechanisms for influencing students' life chances. Curriculum grouping, or tracking, is one powerful system of sorting and classifying students. Clearly, various high school tracks have a profound influence on the types, variety, and quality of students' educational experiences, easing access to intellectual challenge and appropriate coursework for college for some, while limiting information and reducing mobility for others.

Grouping systems most often sort students into the academic or college bound track, the general track, and the vocational track. The stability and persistence of track assignments, as well as their exhaustiveness as constructs describing a student's educational experiences, have been thorny empirical problems as well as equity issues, and have recently come under challenge (Oakes, 1985; Garet & DeLany, 1987).

Rosenbaum (1978) found that understanding selection systems within schools is critical for understanding the educational and occupational attainment process. He noted that despite progress in understanding the link between sorting students and students' future occupational choices, researchers know "very little about the structure of opportunity within schools and its influence on youths' opportunities in society" (Rosenbaum, 1978:236). His inquiry focused on how that sorting function works.

In a case study of one high school, he found administrators and teachers articulating a single set of norms, suggesting an open system where all students had equal access to educational opportunities. In examining school records, however, he found the opposite: a set of stable, persistent tracking patterns which suggested "structural properties...: [where] all boundaries are not equally permeable, some are permeable in only one direction" (Rosenbaum, 1978:242). The tracking system was structured so that students in the highest track stayed in that track; non-college track students stayed in their tracks; and while lower-track college bound students moved into non-college tracks, the reverse rarely happened. In other words, if tracking systems were a series of valves, most of the valves opened only in one direction -- down. Rosenbaum concluded that the differences between the "apparent" opportunity structure and the "actual" one were real and persistent. While the former appeared to be open and grounded in norms of fairness, the latter belied those assumptions and revealed patterns of constrained opportunities and misinformed choices for lower-track students.

Rosenbaum (1978, 1980) presents an important concept -- the structure of opportunity -- for studying how access to educational resources within schools was structured into an elaborate, stable tracking system. Gamoran and Berends (1987) offer a useful review of large-scale surveys and ethnographic studies, and then compare each type against the other in order to achieve a more complete understanding of tracking and its effects.

1. Research on Tracking: The Surveys

The impetus for much of survey research was the need to further explore within-school variations in achievement found in previous research, notably the Coleman Report of the mid-1960s (Coleman et al., 1966). Several studies have found that participation in the academic or college bound track is associated with higher achievement levels (Alexander & Pallas, 1984; Gamoran, 1987; Kerckhoff, 1986). In addition, HS&B and College Entrance Examination Board (CEEB) data (Sebring, 1987) support the notion that academic track placement shapes higher achievement levels, even when controlling for aptitude. While some researchers have found smaller effects when ability (Jencks & Brown, 1975) and pre-high school achievement (Alexander & Cook, 1982) are controlled, there seems at least some consensus that achievement is shaped, in part, by track placement. At least in mathematics and science, much of this achievement is explained by course-taking patterns (Gamoran, 1987).

Post-high school plans are more consistently associated with track (Alexander, Cook, & McDill, 1978; Rosenbaum, 1980). This is not surprising since the labels given tracks -- academic or college preparatory, vocational, and general -- are predictive of those plans. Students in the academic or college preparatory track are more likely to attend college than their general or vocational peers (Alexander & Eckland, 1975; Jencks & Brown, 1975; Rosenbaum, 1980), and to have higher overall educational attainment (Wolfle, 1985).

One critique of this survey research is that the track variable may not be robust. While two studies reviewed by Gamoran and Berends (1987) used more refined and empirically based measures of track (Kerckhoff, 1986; Hotchkiss & Dorsten, 1987; see also Westat, 1988), the bulk of large-scale surveys relied on student self-reports or on the reports of others in the school. Because of validity concerns that come up when students are asked about their course-taking, researchers compared the HS&B 1982 student transcript data with the student self-reports. According to Goertz (1989:18-19), these analyses "found that the quality of student reports on amount of course work ... differed by subject area," with correlation coefficients ranging from 0.87 to 0.40.

2. Research on Tracking: The Ethnographies

Noting that surveys do little to unpack the complex tracking processes within a school, Gamoran and Berends turn to ethnographies to provide rich descriptive detail about the "subjective meanings of the events and patterns of life in schools" (1987:420). One finding of interest comes from the Oakes' (1985) work in 25 middle and high schools. While high school track placement overlaps substantially with the distribution of ability -- more able students tend to be found in academic tracks; less able in general or vocational tracks -- those descriptors do not capture the complexity and subtlety of the stratification. Oakes (1985) and Goodlad (1984) found that "nearly all the schools grouped students by ability for several subjects, but few had curricular programs as clearly defined as in the school studied by Rosenbaum (1976)" (Gamoran & Berends, 1987:421).

Ethnographic research has also documented well the instructional differences between tracks. Some tracks tend to simplify and fragement instructional tasks for some groups (Hargreaves, 1967; Metz, 1978; Oakes, 1985), resulting in what Page (1984) describes as a "skeletonized" and "univocal" curriculum for lower-track students. Moreover, the assignment of students to teachers is not random in schools: ethnographic work suggests that "the more experienced teachers and those regarded as more successful are disproportionately assigned to the higher tracks" (Gamoran & Berends, 1987:423). And teachers in higher-track classes seem to devote more time to instruction, teach with more energy and enthusiasm, and vary their instructional approaches more than teachers in the lower tracks (Oakes, 1985). The ethnographic research, then, provides a pattern of findings that strongly suggests that there are dramatic differences in the educational resources available to students in lower-track and upper-track classrooms.

Ethnographic research also focuses on the social context of tracking, showing how differential status accorded track labels shapes attitudes towards school. Students placed in lower-ability and lower-status tracks tend to develop anti-school attitudes; those accorded the higher status of academic tracks are more likely to bond to school and schooling, and are therefore less likely to disengage from the schooling process (Finn, 1989). Teachers contribute to this dichotomizing process as well (Finley, 1984; Rosenbaum, 1978; Hargreaves, 1967), as do other students (Rosenbaum, 1976; Oakes, 1985; Willis, 1981).

In summarizing the ethnographies, Gamoran and Berends note that this "literature brings a consistent message about the effects of tracking -- here, that it creates differences in students' attitudes and behavior that may be further linked to achievement and post-high school aspirations" (1987:428).

3. A Questioning of the Track Concept

There is also some recent research that calls into question the entire notion of labeled tracks in American high schools. Garet and his colleagues take a more micro perspective on student course-taking patterns and challenge much of the conventional thinking. They conducted case studies of six high schools to capture science course-taking among students who entered the schools as freshmen in 1979. Relying on student transcripts and interview data, Garet and DeLany (1984:3) attempted to redress the lack of attention in tracking research on "the fine-grained structure of the curriculum in individual high schools." Focusing on track placement as an organizational process demands sensitivity to variation across individual high schools, "particularly across schools that differ in socioeconomic context" (1984:3). Arguing that it may be misleading to aggregate student data across schools, they propose focusing on the waves of course choices made during a student's high school career, with particular attention to key actors, established counseling procedures, and the information flow, as well as the student's hopes and aspirations.

Garet and DeLany found great variation in the initial science courses that 10th graders took when each school was studied in depth. While socioeconomic status contributed to much of the difference, the 11th and 12th grade course-taking patterns of those students who took biology in 10th grade varied substantially, suggesting that "for many students, the curriculum sequences observed resemble a somewhat random-appearing collection of courses, not easily classifiable according to track" (1984:11). This challenges the whole concept of "track," with its coherent set of courses, rigidity, impermeability, and exclusivity.

One explanation for these seemingly-random patterns is that the shifts might well represent informed, reflective choices made by students as they grew in intellectual self-knowledge. Another is that the curriculum "wobbled" from year to year because of the idiosyncratic nature of teacher choice, staff turnover, and the like. Further, irregular course-taking patterns (and hence idiosyncratic or "incoherent" student choice) might well be the result of scheduling conflicts. Garet and DeLany (1984:12) conclude that course-taking irregularities might not be intentional but rather the result of the "operation of multiple, loosely connected standard operating procedures at the schools...[the result of] constraints and organizational choices."

Building on data they gathered on students entering high school in 1979, the researchers conducted a second study (Garet, Agnew, & DeLany, 1987) focusing on the four California high schools. This time, they considered, indepth, a full cycle of curriculum decisionmaking (January 1985 through January 1986). The schools they examined were in the midst of adjusting to recently enacted high school graduation requirements. Garet and his colleagues conducted monthly interviews with principals (or assistant principal for curriculum), math and science department chairs, and counselors. As another source of data, they compared all students' initial course requests, made in the spring of 1985, with final course assignments m their educational aspirations and reasons for requesting certain courses.

From this research, the researchers concluded that students cannot be neatly sorted into the college bound and the non-college bound. However, those who began in non-college science were less likely to move into college preparatory science than those who began in college science classes. In these four schools, the actual or enacted curriculum was the result of linked decisions about course offerings and student distribution across the available courses. A set of loosely related decision waves had occured: (1) the course offerings ("menu") was constructed; (2) information was disseminated to parents and students; (3) formal information was collected and consolidated; (4) negotiations took place; (5) the master schedule was built; and (6) the master schedule was altered to incorporate not only student requests, but also the needs of the school and district (DeLany, 1991). This process was characterized by uncertainty and constraints, and was made all the more fluid and unpredictable by changes in the student population, student programs of study, and the course menu. Thus, the decision process was one of not only uncertainty and constraints, but also adjustments and adaptations.

Conclusions

This complex web of research sets the stage for our investigation of the effects that changes in Maryland's graduation requirements had on education in that state. By documenting the effects at the school level over time (from just after the bylaw was enacted to four years later) and by investigating course-taking patterns before and after the policy was enacted, we can capture not only the diversity of responses across schools, but also the policy's influence on opportunities for different groups of students. Five chapters present data to help answer five key questions that emerged from the preceeding literature review:

(1) What is the local variation in response to the policy change?

(2) How has the policy affected tracks and tracking systems as a form of access to resources?

(3) What impact has the policy had on students and teachers at-risk?

(4) How has the policy altered educators perceptions of their influence over their work?

(5) What was the intent of the policy and how well has that been received by the higher education and business communities?

CHAPTER 3:
WHERE'S THE ACTION?
LOCAL VARIATION IN RESPONSE TO POLICY CHANGES: STUDENTS, TEACHERS, AND THE CURRICULUM

This chapter begins to explore the findings of RBS' four-year study of high school graduation reform. One of our chief findings is that local schools and districts vary enormously in their responses to state-mandated policy. A complex mix of historical factors, local economic conditions, characteristics of the population being served, as well as school-specific conditions such as culture, internal resource allocations, and posture towards the state account for this variation. Yet policy mechanisms rarely take this mix into consideration: the policy implemented at Fast Track is the same policy installed at Urban and Rural. However, local capacity to respond varied considerably, and so these factors caused differences in implementation across the five schools.

This theme -- local variation -- is woven throughout our discussion of the findings, but is addressed in this chapter more explicitly. We detail schools' differences here to foreshadow much of the discussion that follows in Chapters 4 through 7. First, we describe differences in the schools' early responses to the policy change. The first round of data collection took place in the fall of 1986 -- one year into the new policy. We found teachers and some administrators still reeling from the short time they were given to respond (two months), and students misadvised about Certificate of Merit courses. We also found wide variations in knowledge about the reform.

Next, we turn to a discussion of whether student experiences are different because of the reform, and if these experiences differ across all five schools. Since the policy reform was to ensure that students take a particular set of courses (through specific credit requirements) and that more students take more advanced courses (through the Certificate of Merit option), we reasoned that there would be changes in patterns of student course-taking. Thus, we compare student transcripts from the last class unaffected by the reform (1986) and the first cohort to graduate under the new requirements (1989). We focus on credits taken, course failure rates, and the systems of tracking students at each school. This interest in tracking becomes a second theme and, while touched on here, is discussed in more depth in Chapter 4.

We next balance the transcript analyses with a discussion of our interview data on how students perceive their course-taking experiences. Another way we examine local differences in responding to the policy change is by analyzing master schedules. Although available longitudinally (over the past six years) at only three of the five high schools, these schedules let us describe teacher deployment at the departmental level and tell us whether this changes over time. We thus scrutinize the effects of the policy on specific academic departments.

To complement the portrait of departmental effects, we next detail teachers' views on changes in the curriculum. Again, in this final section, we highlight differences among the five high schools, suggesting that local context has a substantial role in shaping how local schools respond to, modify, adapt, and (at times) ignore state-mandated change.

Early Responses to Reform

The interview portion of the 1986 data gathering effort solicited perceptions of, judgments about, and reactions to the new requirements from those most affected at each of the five high schools: administrators, guidance counselors, department heads, teachers, and ninth grade students. Representatives from these groups were selected to be interviewed by a local school liaison (often the head of guidance) and a staff person from the Maryland State Department of Education who was familiar with the school. In all, a total of 182 people were interviewed.

The interviews in the five high schools covered seven general topics: (1) potential effects of the new requirements on the dropout rate, minorities, and the foreign born; (2) the interviewees' level of information about the new requirements and ways that information flowed to them; (3) early effects on specific departments; (4) early effects on special programs; (5) the interviewees' knowledge of, and judgments about the Certificate of Merit option; and (6) their thoughts on how requirements might or might not affect students' educational aspirations.

1. Dropouts, Minorities, and the Foreign Born

Early reactions to the impact of new requirements on at-risk populations were mixed but consistent across the five schools. About half of those interviewed felt that stricter credit requirements would make school harder for marginal students; the other half felt that it would have no particular effect. People with this latter perspective remarked that the effects would be no different on minority students than others because minorities represented the same range of abilities. Some people said that the functional tests specifically would discourage more students from completing high school than would the increased course requirements.

2. Level of Information

The level of information that interviewees had about the new graduation requirements varied greatly depending on the high school. In fact, there was more substantial variation on this topic than on any of the others. Fast Track and Urban were at the two extremes. Generally, both adults and students at Fast Track had much more (and more detailed) information about the policy change than those at Urban. Their information about graduation requirements was indepth and accurate, in general, and they understood the stipulations about the Certificate of Merit, in particular. Commenting on the flow of information from the district office, one administrator stated, "We received copies of everything -- very thorough." Almost every person interviewed at Fast Track, including students in the non-college-bound or general track, had in-depth knowledge of the new requirements. While a few students reported not knowing what the specific requirements were, when compared with students from other schools, their knowledge was remarkably high.

Urban High School students and staff stood in dramatic contrast with Fast Track's. Few of the Urban teachers interviewed were aware of the policy changes, few appeared to have a need to know, and what information was available to them early in the implementation process was often incorrect. People there expressed their frustration: "Information hasn't flowed as smoothly as it might have -- there is confusion about it even now" (administrator); "We received incorrect information that I disseminated, then that was superseded" (department head); "Teachers are confused" (teacher); "Teachers are the last people to learn about change; the newspaper knows more than we do" (teacher). Ninth grade students also demonstrated a lack of information about the requirements. Responses such as, "I didn't know we had to take any courses like that," and "I didn't know anything about it" were typical.

We attribute these stark differences to two major contextual characteristics of the schools. First, Urban is part of a large, complex urban school system with all of the problems inherent in large bureaucracies. During the 1986 data gathering, we noted a slow flow of information, which increased the likelihood of confusion and error as information passed through the bureaucratic layers. The size, complexity, and bureaucracy of the system compounded the difficulties of disseminating accurate information quickly and smoothly to people at Urban. In contrast, Fast Track High School serves a small, but growing, suburban area with many resources, has a history of being one step ahead of the state department of education, and shows a certain "savvy" about receiving and managing state information and regulations.

Second, the student populations served by these two schools are quite different. Fast Track students were primed from elementary and middle school, and pressured in high school, to consider college the most appropriate post-secondary choice. While much of this pressure came from students' homes, the school reinforced it with an emphasis on college preparatory courses and, more specifically, Certificate of Merit courses. A large percentage of students took college preparatory courses and did, in fact, go on to some form of post-secondary education. Many that we spoke to, however, also took Certificate of Merit courses and failed them.

Urban serves a relatively homogeneous population in terms of educational aspirations. Many of the best and brightest students have been "creamed" off and attend the city's magnet special-admissions high schools, leaving mostly general track students behind. When asked to describe the students served by their high school, teachers responded that they were the ones not talented enough to apply for, and be admitted to, the magnet high schools. Urban's dropout rate was estimated to be as high as 50 percent. Most students enrolled in general courses, with few in college preparatory courses and even fewer qualifying for Certificate of Merit-level courses.

All this points to the fact that administrators, counselors, and teachers at Fast Track had a much greater "need to know" about the new requirements than did those at Urban. However, the question that still lingers is how many more college-bound or Certificate of Merit students there might be at Urban were they offered better opportunities.

In the other three high schools, early levels of information were fairly comparable, ranging from moderate to high despite the differences in school environments and cultures. Rural High School was the smallest school in the study with less than 250 students in all four grades. This extreme smallness came up time and time again, sometimes as an explanation for events, sometimes as a rationale for decisions, and occasionally an excuse.

United Nations, situated in suburban Washington, DC, serves students from over 40 countries. Students speak a vast array of languages, and school staff were proud of, and seemed to thrive on the diversity. Nonetheless, these same staff saw themselves as having more difficult assignments than staff in other nearby high schools, and teachers here believed that teaching at United Nations qualified them to teach anywhere.

Staff and students in these latter three schools gave remarkably similar accounts of the information they received about the new requirements. School administrators and counselors most frequently mentioned Board of Education memoranda as their information source. Department heads and teachers got their information through routine school channels: in-school administrative and department meetings and through county office supervisors. Students received information at counseling sessions in feeder schools, from their current counselors, and at school assemblies.

The early flow of information -- in a tight timeline of only a few months from announcement to implementation -- worked well in all schools except Urban. In the early implementation stage, schools had to learn about the new requirements and identify Certificate of Merit courses in every department. The available information, however, stressed the implications of the Certificate of Merit in academic departments, to the near total exclusion of information to other departments such as art, music, or vocational education. This was apparent across all five schools. We concluded that information regarding the Certificate of Merit was incomplete and required follow-up and technical assistance to ensure thorough implementation.

3. Effects on Departments

Overall, the new graduation requirements affected five departments or subject matter areas directly: mathematics, science, foreign languages, fine arts (visual arts, music, dance, and theatre), and practical arts (vocational education, industrial art, computer studies, technology education, and home economics). The two subjects most affected in the first year of implementation were fine and practical arts. The new graduation requirements stipulated that all incoming students (as of the class of 1989) take one course in each of these subjects. No such requirements had existed before.

Fine arts and practical arts. Staff in the fine arts and practical arts departments of the five high schools were aware that the requirements had increased enrollments among ninth and tenth grade students. Many noted, however, that the increases were off-set by dropping enrollments among upper-level students; or they anticipated that this would happen. These staff believed that, as students moved through high school, their schedules would allow less room for electives and they would no longer choose, for example, an advanced painting course, advanced electronics, or advanced tailoring. Instead, more lower-level students would enroll in introductory or survey courses (for example, a history of Western art course) to satisfy the new requirements. Thus, teachers projected enrollments shifting from more advanced courses to introductory ones.

Effects on practical arts departments seemed to depend on the entrepreneurial spirit of department faculty and the degree of support from the administration. At Fast Track, the business education department had received approval for an introductory typing course (keyboarding) to serve as a prerequisite for computer courses. This ensured continued high enrollments in the typing courses. Moreover, because this department controlled access to more advanced computer literacy and programming courses, it obtained an advantage in capturing college preparatory students.

The situation at Rural deserves special discussion here as well, as it typifies constraints on the state's small high schools. Rural's small size clearly had great value for the people working and attending school there. A teacher captured the sense of family at the school when she said: "The closeness of the faculty is great here -- it's a great opportunity to know each other professionally and socially. It's a pleasure to come to school every day. All the kids, the majority of their parents, went to school here".

Yet, this smallness constrained faculty flexibility. It forced many teachers to teach out of their subject area so that the school could offer more courses. Although true to some extent at all the high schools studied, the competition at Rural among elective courses and departments (fine arts and practical arts) was particularly acute during the early implementation of the new requirements. This was the unfortunate result of less flexibility and choice in course-taking and the state's requirements in fine arts and practical arts.

We concluded that this particular aspect of the policy should be thought through carefully, especially for small high schools, since there is the potential to pit departments against one another in the competition for scarce resources (in this case, students). Such a situation could destroy one of the central values of the small high school -- its closeness and sense of family.

Mathematics. Staff in the other three departments directly affected -- mathematics, science, and foreign languages -- also anticipated adjustments and began to prepare them. This was most evident in the mathematics departments of the five schools, largely because the new state policy required students to take a third year of mathematics. The first class impacted by the new requirements was in its sophomore year during the 1986 data gathering. That meant that mathematics departments were planning courses for the very next year -- that class' junior year.

Even in Middle Class, where the county already required a third year of mathematics so the state requirement created no real need for change, the mathematics faculty discussed revising the curriculum. Specifically, they wanted to offer a third year of general mathematics to low-achieving students: "The new requirement will increase the frustration of the students who don't pass;" "I'm hearing a lot of students complaining that the third year is too difficult and not relevant for their future plans;" "Math teachers will need more inservice to help them cope with third year general students."

Teachers at the other high schools echoed these concerns about the third year of general mathematics. Everyone was used to college preparatory students enrolling in a third and even a fourth year of mathematics; for these students, no adjustments were anticipated. However, all the schools had made adjustments or were anticipating making adjustments to the roster, the curriculum, and in staffing to accommodate a greater need for third-year general level mathematics. In general, the school staffs saw the need for change as a result of the state's mathematics requirement and most welcomed it. Even at Rural, where small size made adjustments problematic, teachers believed that an additional year of mathematics would be valuable to students.

Science and foreign languages. Across all five high schools, science and foreign language departments remained relatively unaffected by the new requirements. Some teachers noted that the potential for adjustments was there because the Certificate of Merit option stipulated that students do additional coursework in science and foreign language. However, no one reported any early effects. They attributed this to the fact that the same students who enrolled in honors or advanced placement courses were the ones who probably opted for the Certificate of Merit and they were already accommodating these students. Thus, as several teachers reported, the Certificate was not a big incentive to students because it targeted those already well-primed to take advanced courses.

4. Effects on Special Programs

Across the five high schools, there was consensus that the new requirements could prove beneficial to both special and vocational students by requiring them to take courses they might not otherwise take. Although the level of information about the requirements and their implications for special education students was generally quite low, school staff appeared to agree that, except for new elective opportunities, effects on special edcuation students would be limited. At Fast Track a counselor noted that the requirements would "encourage further exploration of various career areas." But others felt that the requirements might push more special education students into accepting a High School Certificate rather than striving for a regular diploma. Those interviewed felt that state-mandated tests (also required for graduation) were much more of a problem for these students than the new course requirements.

The problems anticipated for vocational students were tougher, particularly for those who attended half-day vocational programs (United Nations, Middle Class, Rural, Urban). The thrust of the requirements, they indicated, was exclusively academic, making vocational students feel less and less "legitimate" in the regular high school. Also, the increased requirements left students little or no room in their four-year rosters to fail a course. Moreover, a heavy academic and vocational load, eliminated electives completely. Students choosing a work-study option for their last two years, had to plan ahead so that they could fulfill all of the state's course requirements and still be away from the school for half a day. A teacher from Fast Track best summarized this fear: "Vocational courses will get second class status," she said. And a teacher at United Nations, although wrong about vocational students being eligible for the High School Certificate, predicted that, "Vocational students will be counselled into the High School Certificate and we will become a three-track school: college, general, and vocational."

During this early implementation phase, a handful of teachers thought that the practical arts requirement would strengthen vocational programs. With the first taste of a practical art, their reasoning went, the student would become interested in the subject and maybe choose to stay with that interest. Another minority view was expressed at Urban. Afraid that vocational programs were being phased out of high schools altogether, teachers worried about their jobs as well as about the doors that might be closing for inner-city students. One administrator at United Nations also noted this, saying that vocational programs were suffering already because of declining enrollments, block scheduling, and the academic orientation of the early educational reform movement.

5. Knowledge of the Certificate of Merit

Generally, according to the interviewees, the Certificate of Merit option did not affect the high schools very much in this second year of implementation. If effects were mentioned, they were mentioned in relation to increasing enrollments in either science or foreign languages. However, most thought that these increases would be small because the Certificate appealed to honor students, and these students were already enrolled in three years of science and advanced foreign language. Thus, overall, staff in the high schools did not anticipate the Certificate having major effects. Some subtle differences among the five high schools did exist, however.

During the 1986 data gathering at Urban, the Certificate had almost no visibility. In the words of faculty and administrators,

> There are no effects. There is no Certificate here. We lose this area's best 40 percent to special schools.
>
> We don't have the courses. We don't have the staff to teach them.
>
> No one knows about the Certificate here.
>
> The Certificate doesn't meet the kids' immediate needs.
>
> I have no idea about the Certificate.

The combination of Urban staff's low expectations for the student body and the lack of information about the requirements, and especially about the Certificate of Merit, made the Certificate option barely present.

At Middle Class, United Nations, and Rural, the Certificate of Merit was in place, serving academically talented students exclusively. It did not appear to be an option in either fine or practical arts departments. Teachers assumed that the Certificate was appropriate only for the most advanced students in traditional academic-level classes. Thus, early effects of this new state Certificate of Merit were limited; the same students who enrolled in advanced courses generally (honors, gifted and talented, advanced placement) were electing Certificate of Merit courses. The report from Rural:

> We get frustrated when kids take the easy way out. Kids who challenge themselves are involved in the Certificate.
>
> The Certificate may possibly reward only students who are interested in mathematics and science.
>
> The Certificate may encourage kids to take more mathematics and science, but it will probably have the most effect on advanced kids.

And from United Nations:

> The Certificate is going to be just an extra accolade for the kid who was going to take accelerated courses anyway.
>
> I don't see the Certificate as a terribly motivating kind of thing.
>
> There is no impact from the Certificate because no one knows about it here. There's been no notice about it. I don't know which courses fit that category.

> The merit option may contribute to a polarization of the haves and have nots. It might promote elitism. People will begin to question the value of the regular diploma.

At Middle Class, interviewees responded much the same as those at Rural and United Nations They noted that the Certificate appeared to be attractive only to honors students and, because these students were such a small percentage of the total population, it had no great effect on the school. Staff said, "It has not been a great incentive -- only 25 percent of our students and these are all advanced placement kids"; "It is a 'big deal' for overachievers -- the AP kids will take to it."

The picture was substantially different at Fast Track, where a great deal of emphasis was placed on attending college, both in school and at home. Students reported that they felt pressured into taking Certificate of Merit courses. One student described how he had taken five such courses and failed all five during the first marking period. Although the school staff expressed concern about this apparent mis-advising of the students, the administration was clearly behind the Certificate of Merit. As they put it,

> I tell the guidance people to push but they back away.
>
> There are some kids signing up who shouldn't--their parents are pushing them.
>
> There are more this year biting off more than they can chew.
>
> Anyone who wants to go to college signs up for Merit courses.
>
> Kids are adamant about the Certificate even if they aren't able.

Thus, early on at Fast Track, more and more students were urged to sign up for Certificate of Merit courses, thereby ensuring virtual overlap between regular college preparatory courses and Certificate of Merit courses. In this scramble for grades and a spot on the college track, Certificate of Merit options for fine and practical arts fell to the wayside.

6. Aspirations of Students

We were particularly interested in how the new requirements might affect student aspirations, especially during the early implementation phase. One intent of the new requirements was to encourage students to become more involved in the academic aspects of high school life. That is, policymakers hoped that the requirements would push students to take more courses -- hopefully more rigorous courses -- to ensure that they master the skills necessary for effective functioning as a citizen in the state of Maryland.

We found that this intent was soon translated into a "more is better" approach to learning. While the original mandate called for enriching courses of all sorts, schools did not implement this intent well. One administrator from Middle Class noted that the requirements were good because they more clearly defined expectations for students, but bad because they didn't address the quality of courses.

Early perceptions of the overall value of the new requirements varied from school to school. At Middle Class, staff felt that the requirements were a step in the right direction: they would stimulate and motivate students; they would cause students to pay more attention to their coursework; and they would produce students who were well versed in the basics. However, early student reaction at the school was much more mixed. Nearly all ninth grade interviewees felt the requirements were bad: they would reduce the number of electives a student could take; they weren't practical; and they would be hard to fulfill in a vocational program.

Early responses from adults at United Nations were also generally positive. Several teachers mentioned that teachers were increasingly working with students to help them focus their academic energies. One teacher pointed out that the school might become more attractive to the more able student. Several teachers noted that, overall, there would not be many changes in school programs or services within the school, although a few departments might be affected. Concerns were voiced here about foreign-born students and ESOL students (of which they have a growing population) being particularly at risk.

Effects of the requirements on student aspirations at Fast Track stood in stark contrast to those at United Nations. Because of the school's reputation for college preparatory work, increasing student motivation was not an issue. Teachers described most students as being well motivated and expecting to attend college. In fact, Certificate of Merit courses had already nearly become synonymous with college preparatory courses.

At Urban, the early picture was less clear. Some administrators and teachers expressed hope that the requirements carried higher expectations for students and that students would respond to those expectations by striving to do better in school. Others saw the requirements as negatively affecting both staff and students -- staff would become more frustrated; students would drop out in greater numbers. The requirements' potential to capture student interest and hold it over the high school years seemed elusive at Urban. Caught between the pressures of increasing costs, declining enrollments, and staff shortages, the school could barely offer basic courses.

In sum, overall early perceptions about how the new requirements might affect student aspiration were that in the short-run, they would keep students in school and encourage them to work harder, and in the long-run, make them more well-rounded citizens. However, not everyone's predictions and observations about effects were entirely positive. Staffing and scheduling were problematic.

The findings presented above lead to an overall conclusion and an associated recommendation. General conclusions, like the one presented below, and recommendations are highlighted by a box and indented, bold-faced type throughout this report. Each recommendation is numbered sequentially within each chapter.

> **Conclusion: Not all schools were able to respond early and fully to policy changes because of variation in capacity. Local factors such as history, culture, and resources are important indicators of a school's capacity to deal with policy changes.**
>
> **Recommendation 3.1: Effective early implementation of mandated change requires special attention by both state and local educators when dealing with information issues such as accuracy, timeliness, and systematic follow-up. These are central to effective early implementation of the policy.**

In addition to the early responses to reform, we were interested in how students' actual course-taking patterns differed across the five schools, and whether these patterns changed as the policy changed. The next section details these analyses, highlighting important differences among the schools.

Changing Course-Taking Patterns: Students' Experiences

One way to assess differences in local response to the policy initiative is to aggregate student course-taking patterns to the school level and compare those aggregate responses across the five schools in the sample. Five key questions help organize this analysis of the transcript data. These questions or themes emerged as themes either through the expressed intent of the policy or through concerns expressed by local educators in early interviews. The questions being asked are:

- Are students earning more credits and/or taking more courses?
- Are students earning credits in more rigorous subject areas?
- Are students struggling more with their courses?
- Has the balance of credits earned in various subject areas changed (both for areas affected and unaffected by the requirements)?
- Has the tracking system been affected by the new requirements?

Transcript analyses provide vivid descriptions of students' course-taking experiences across the five high schools. They also allow us to compare patterns before and after the requirements took effect. First, we show how the number of credits students took went up at each school, with the exception of Rural. A similar pattern emerged with regard to students taking more advanced courses in all schools but Rural. In fact, Fast Track's increase was quite dramatic. Students in all five schools failed fewer courses, with Middle Class showing the biggest drop and Fast Track the smallest. Grade point averages (GPAs) at four schools increased modestly from 1986 to 1989; only Fast Track students' grades declined a small amount.

In terms of enrollments in specific subjects, math (with the exception of Rural), fine arts, science, and foreign languages (except Rural) all showed increases. Practical arts course enrollments decreased at United Nations, Urban, Middle Class, and quite dramatically at Rural, increasing only at Fast Track. Enrollments in specific vocational courses increased at Fast Track and Middle Class, declined at United Nations, Urban, and again quite dramatically, at Rural.

Finally, this section shows how the tracking systems at all five high schools are much more permeable than previously thought. The schools appear to have widely varying tracking systems, with Fast Track's and Middle Class's more rigid and United Nations' more fluid.

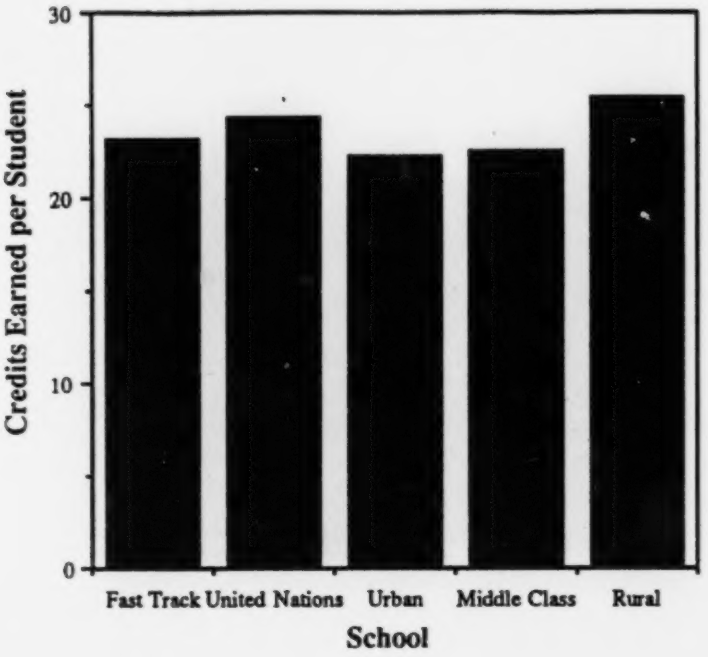
1. Are Students Earning More Credits and/or Taking More Courses?

To answer this first question, transcript data were aggregated to the school level. That is, all individual students' results (across all four years in high school) were combined to create an overall school score. Two separate analyses were then done. The first analysis compared the average number of credits earned by students in the class of 1986 (before the requirements) with students in the class of 1989 (after the requirements). To compute the number of credits earned, the computer scanned each course that a student took to ensure that the student had received a passing grade; when that condition was met, the number of credits was added to the total.

Tables 3.1 and 3.2 present those findings, offering a comparison across the five high schools of credits earned, both pre- and post-policy. Bar graphs summarize most of the findings of this report because they offer a clear visual comparison for the non-technical reader.

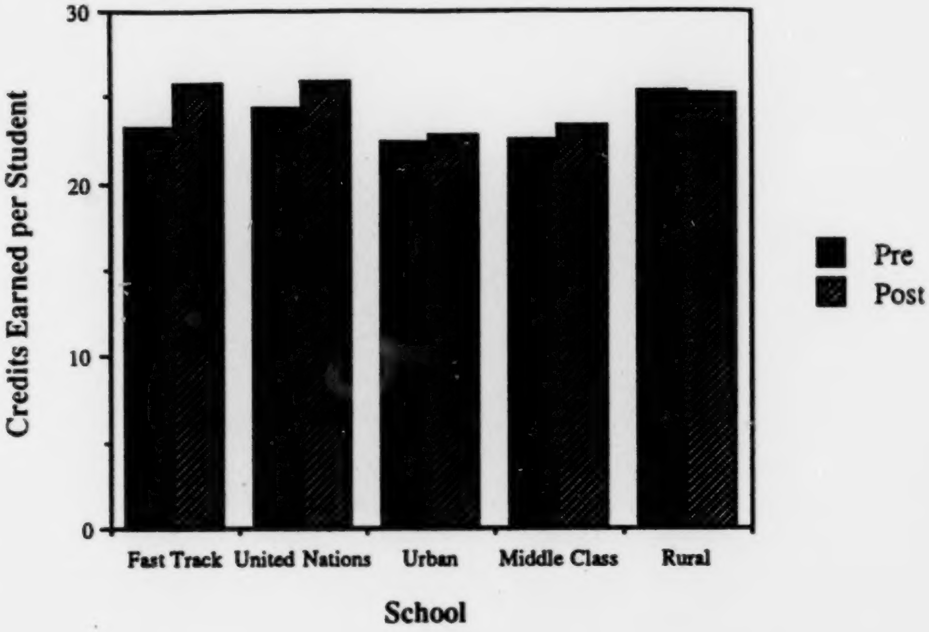
The pre-policy data (class of 1986) in Table 3.1 show that the average number of credits earned ranged from a low of 22.3 to a high of 25.4. That variation represents a significant difference; students at Rural earned over three more credits during their high school careers than did students at Urban. This situation reflects a structural constraint that emerges when some schools have only six-period days rather than seven-period days. As a result, some students can opt to choose from among 24 different full-year courses over four years while other students can choose from 28. Those with the greater number of courses available have more flexibility and opportunity to tailor schooling to meet their special needs. The two schools with the lowest averages (Urban and Middle Class) both had six-period days.

Table 3.1:
Credits Earned by School Pre-Policy



In Table 3.2 we see that in four of the five schools number of credits students earned went up after the policy went into effect. Only Rrural experienced no change in the number of credits earned. The increase in credits earned ranged from a low of just half a credit increase at Urban (22.3 to 22.8) to a high of 2.5 credits (23.2 to 25.7) at Fast Track. In the latter school, much of the increase may be due not only to the new course requirements, but also to the fact that the school increased the number of its periods from six to seven in 1986-87, thus allowing students to take more courses. A similar structural change at United Nations, the creation of an eight-period day for the magnet school students, had more to do with the increase in credits earned than simply the new policy. However, it is difficult to untangle the two. Many people we interviewed argued that the new policy was one of the major forces behind the move to more periods in the school day. Thus, while the number of periods has a big impact on the number of credits students earned, the new requirements were probably an added incentive for schools to increase the number of periods each day.

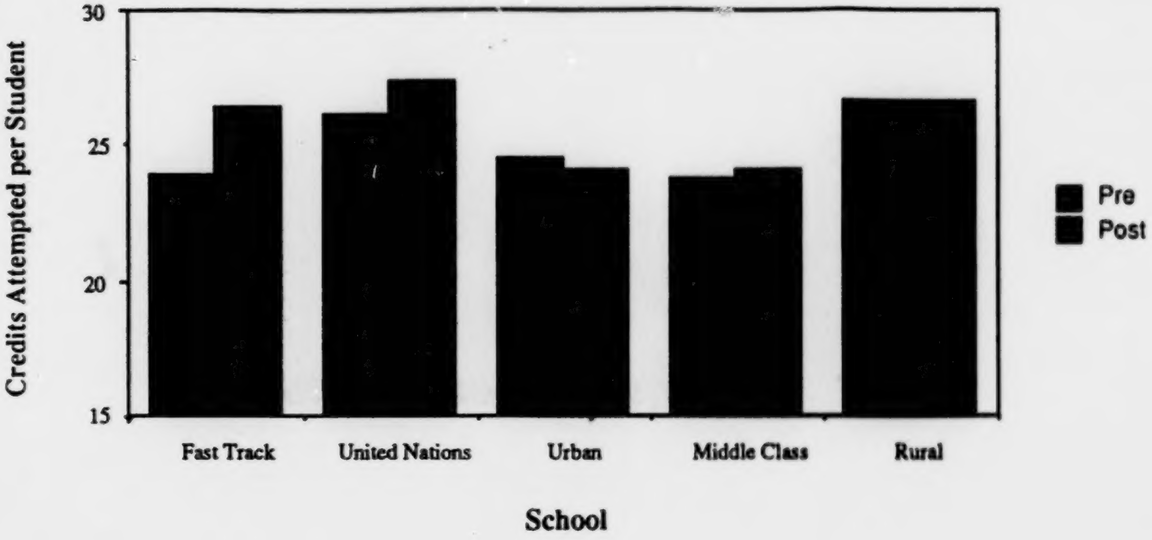
Table 3.2:
Credits Earned by School Pre- and Post-Policy



Another way to explore whether students are taking more courses is to look at the number of credits they attempted to take. This is different than the number of credits earned, because it includes courses in which students enrolled but failed. Table 3.3 summarizes the results of credits attempted. It presents separate results for each school and indicates whether the student graduated prior to or after the policy was put into effect (1986 and 1989).

Like with credits earned, the number of credits students in the class of 1986 attempted had a range of almost three, from a low of 23.8 at Middle Class to a high of 26.6 at Rural. Students with the lowest number of credits were in schools that had six periods in the day instead of seven. The comparison of credits students tried to earn before the policy was implemented and after reveals that students tried to take more credits in three schools, slightly dropped in credits attempted in a fourth school, and made no change in the fifth school. The biggest change was at Fast Track, where the average increase was 2.5 credits. However, as noted earlier, much of this was a function of the school shifting from a six to seven-period day. Not only was there an initial difference in the total credits students attempted to take, but in reviewing the differences before and after the policy was put into place, researchers saw that there were differential responses as well. By creating more flexibility in the school schedule, both Fast Track and United Nations created opportunities for students to enroll in more courses.

Table 3.3:
Credits Attempted[1] by School



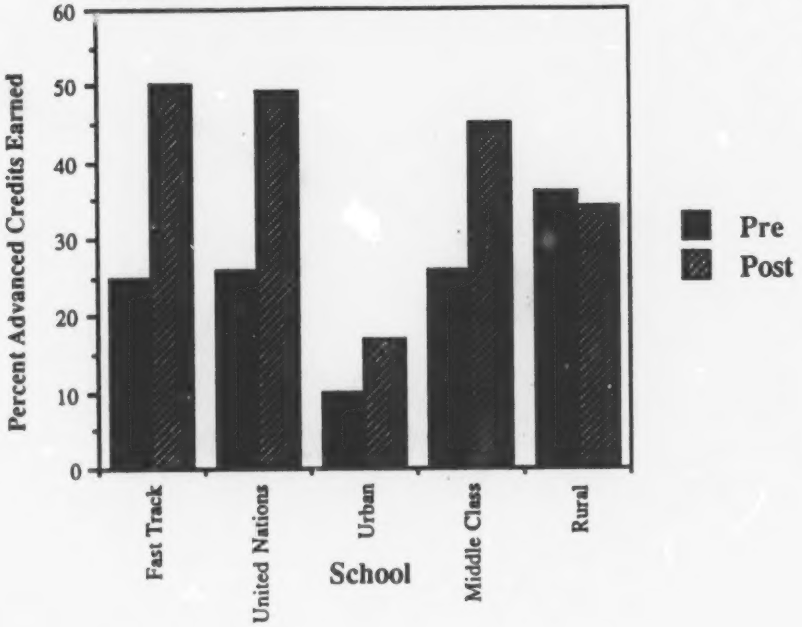
[1] Since the number of credits was only recorded when students passed a course, the number of credits for a failed course was calculated by taking an average of the credits earned for all courses passed.

2. Are Students Taking More Academically Challenging (Rigorous) Courses?

In order to answer this question, we investigated the number and ratio of advanced courses that students took. Advanced courses were defined as those that were Certificate of Merit eligible. While the Certificate of Merit did not exist for the class of 1986, there was enough comparability in course offerings from 1986 to 1989 that any course that was Certificate of Merit eligible for the class of 1989 was coded as such for the class of 1986. The ratio was obtained by treating the number of advanced credits as the numerator and the total number of credits earned as the denominator. The ratio was considered the more appropriate number since the five schools have different numbers of periods in the day, making a straight count of credits not comparable.

Table 3.4 summarizes the proportion of advanced credits earned at each school. Students in the class of 1986 in one school, Urban, earned a very low proportion of credits (10%) that qualified as advanced, while students in three of the four remaining schools showed ratios near 25 percent. Students in these three latter schools enrolled in two and a half times as many advanced courses as did students at Urban. Students at Rural took the largest proportion of advanced course offerings before the policy took effect.

Table 3.4:
Advanced Credits Earned by School



Four of the five schools showed large increases in the proportion of advanced credits their students earned after the implementation of the new policy. Rural was the only school that did not show an increase; it remained about the same with just over one-third of students' course offerings classifying as advanced. At Fast Track and United Nations the proportion of advanced credits earned nearly doubled, going from approximately one-quarter to just under one-half. The increases at Urban and Middle Class were roughly comparable at about 70 percent. However, even with this substantial increase, the advanced credits earned at Urban are still only half of what they are at the next closest school, Rural.

Conclusion: The policy is having desired effects in increasing the numbers of courses students take overall, the proportion of advanced courses they take, and the number of academic courses they take. However, the absolute numbers of advanced and academic courses remains low in some schools. Advanced courses are not available in all departments in all schools.

Recommendation 3.2: The state should ensure that all departments in all schools offer advanced courses or that schools within districts creatively share advanced courses.

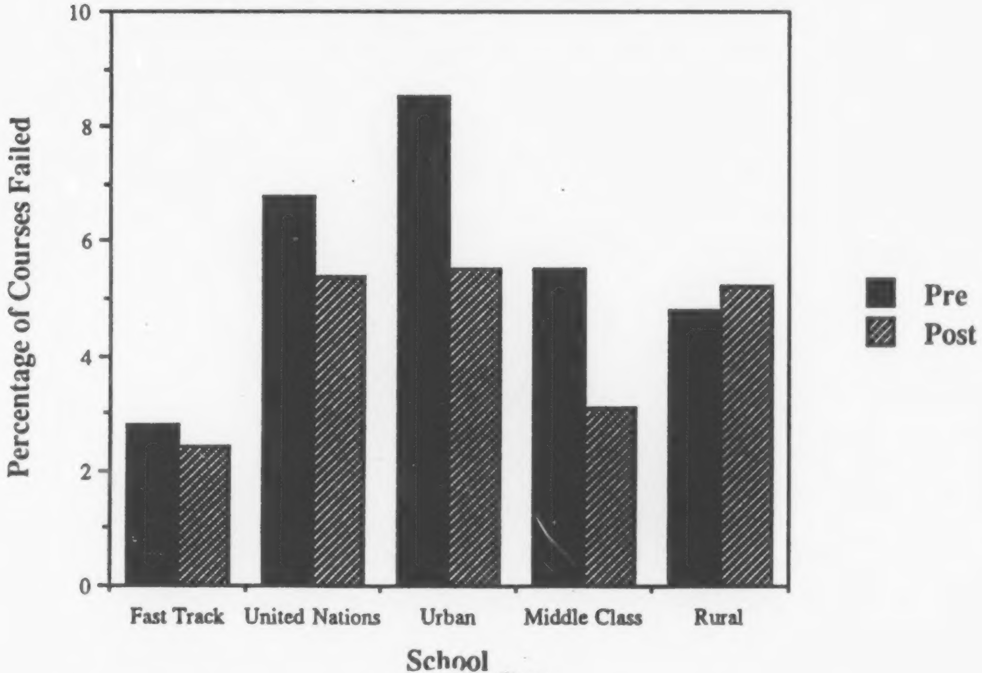
Recommendation 3.3: State and local educators should foster creative solutions which will encourage students to take more advanced courses.

3. Are Students Struggling More with Their Coursework?

One of the arguments against increasing course requirements is that the extra pressure will make it more difficult for students to complete their work. This would particularly affect students on the borderline; that is, students who were just barely able to get by. To examine this question we looked at two indicators: whether students were failing more courses and whether their grade point averages (GPA) had declined.

Table 3.5 compares failure rates in the five schools both before and after the requirements took effect. These figures represent the proportion of all courses in which students received failing grades, either for low performance or poor attendance. Across all five schools the failure rate was less than 10 percent. However, there was marked variation across the five schools, with the highest failure rate (at Urban) being three times the lowest (Fast Track). Balancing these two extremes were more middle-of-the-road rates at the other three high schools. When comparing students who were enrolled before and after the requirements took effect, it is very clear that the increased requirements did not have a detrimental effect on the course failure rate. Indeed, in three schools (Urban, Middle Class, and United Nations), there was a substantial drop in failures. At Urban, where the biggest drop occurred, the failure rate declined by 40 percent. The other two schools showed only small changes.

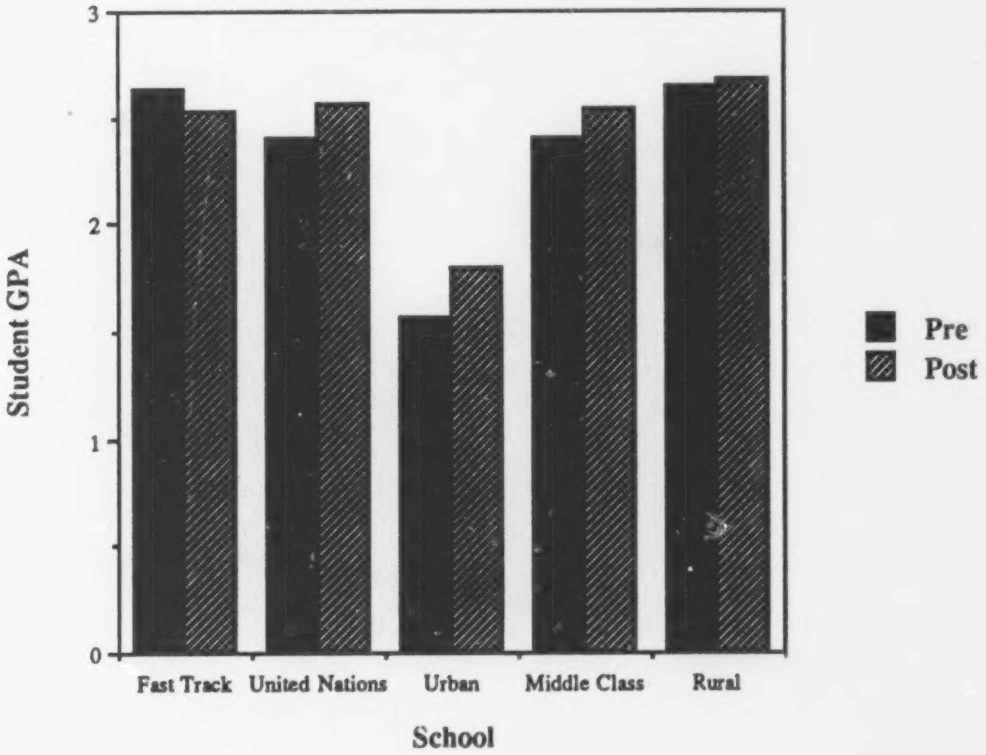
Table 3.5:
Percentage of Courses Failed by School



The figures in Table 3.6 offer a second view of whether students are struggling more under the added requirements. In this case we reviewed the average grades students earned during their high school careers. This GPA is based on assigning each course a numeric value (A=4; B=3; C=2; D=1; F=0) and giving each course a proportion weight based on its number of credits (e.g. a two-credit course is worth twice as much as a single-credit course). No special weights were given to advanced courses. The class of 1986 grade averages (Pre) were highest at Fast Track and Rural (2.6), followed closely by United Nations and Middle Class (2.4). There was very little difference in these four schools. On the other hand, there was a marked drop at Urban (1.6), with Urban's students averaging almost a full letter grade lower than students in the other four schools.

Table 3.6:

Grade Point Average by School



When compared with GPAs for the class of 1989 (Post), there were no significant changes among the schools. Statistical comparisons between the two years suggest no significant differences either.

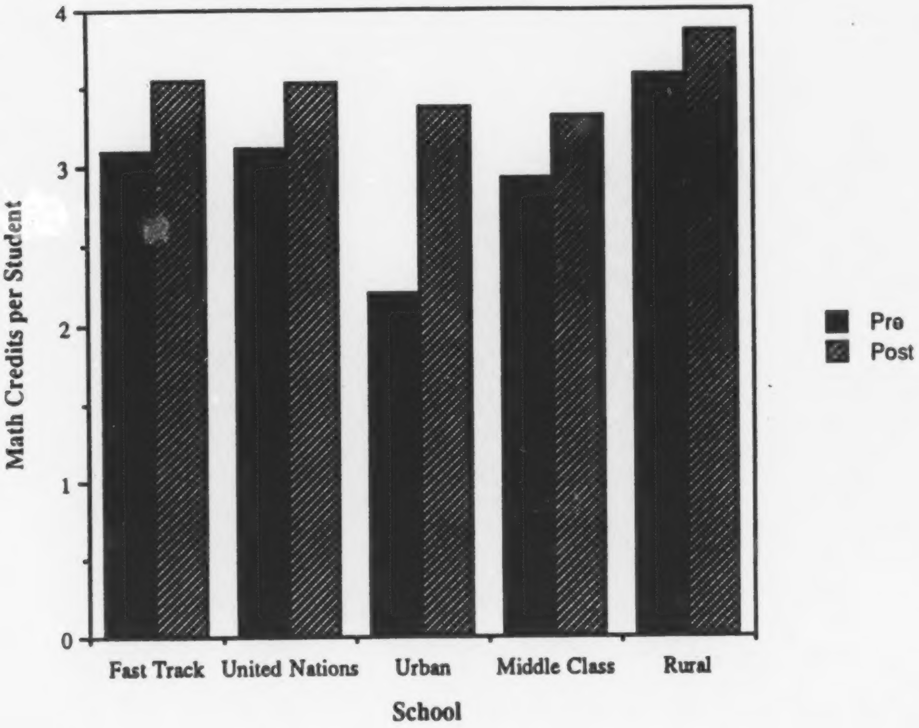
4. Has the Balance of Credits in Different Subject Areas Changed?

In this section we focus on specific subject areas in which the requirements may have had an effect. We review different subject areas: math, fine arts, practical arts, foreign language, science, and vocational arts. The new policy changed coureses in the first three subjects: it increased the math requirement from two to three credits, and added a fine arts and practical arts credit. For students attempting a Certificate of Merit, the policy required an additional science credit (3 instead of 2) and one advanced foreign language (i.e. beyond the first year). The vocational arts area is included in this examination because it is frequently mentioned in the research as suffering when increases are made in other areas.

Math. Table 3.7 displays data on the average number of math credits earned in each of the five schools before and after the new requirements. As has been the case with almost all the data, there were some important differences across the five schools prior to the implementation of the policy. In four of the five schools the average number of math credits earned was near the three credits required by the policy. That is, students were taking three or more math courses even before the requirements took effect. A separate analysis revealed that in those four schools, approximately 68 percent of the students had enrolled in three math credits. At Urban this figure was a low 43 percent. Interestingly, the school in which students earned the most math credits was Rural, which had a strong commitment to at least three years of mathematics even prior to the requirement. The most obvious disparity is between Urban and the other four schools for the class of 1986. While students in the other schools were earning more than the required two credits, Urban students were on average just meeting the two credit requirement.

A comparison of the two cohorts suggests that although most of the schools were already encouraging students to take three credits of math, the formal requirement still had a positive effect on math credits earned. In all five schools the number of credits earned increased. In four of the five schools the increases ranged from a quarter to a half credit. Urban showed by far the largest increase. The average number of math credits earned after the policy was almost one and a quarter greater than prior to policy implementation. This reflects an increase in math credits earned that is almost three times greater than that of the other schools.

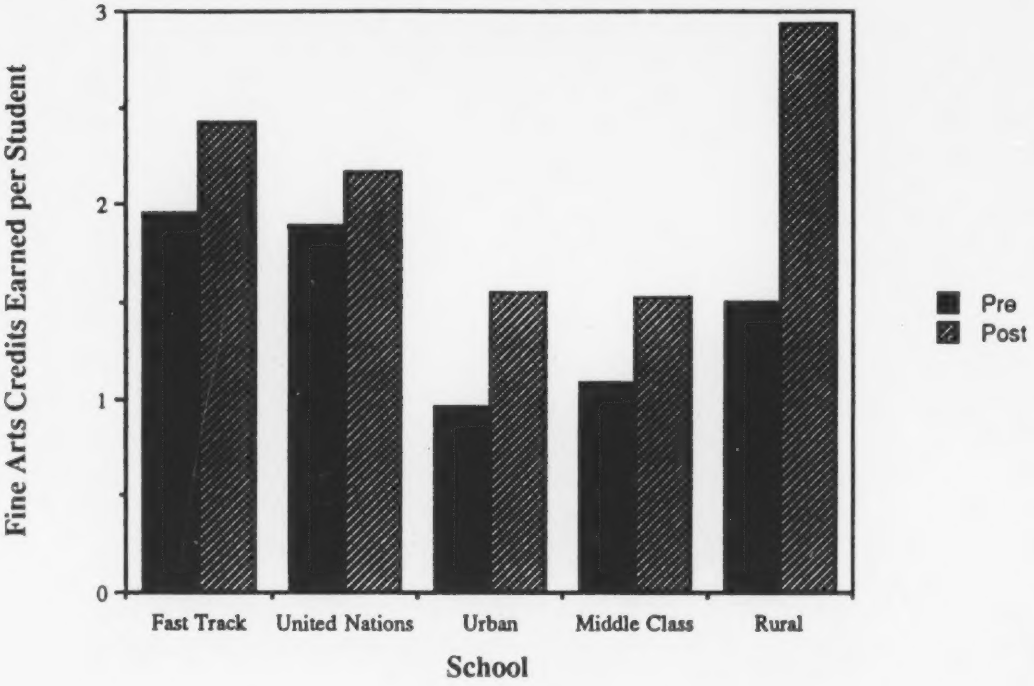
Table 3.7:
Math Credits Earned by School



Fine arts. Fine arts was a new course requirement added by the policy change. Students usually met it by enrolling in a music, art, or drama class. A review of student transcripts prior to the policy found, somewhat surprisingly, that on average students were already enrolling in at least one fine arts class. However, averages can sometimes be misleading. A separate analysis found that the percentage of students in the class of 1986 earning at least one fine arts credit ranged from a low of 50 percent at Urban to a high of 71 percent at United Nations (see Table 3.8). Two schools (Fast Track and United Nations) averaged almost two fine arts credits per student while Rural averaged one and a half. The remaining two schools averaged closer to one credit.

In all five schools the requirement had a significant effect on fine arts enrollments. Average number of credits taken went up significantly across all the schools. The biggest jump occurred at Rural, where the number of fine arts credits almost doubled. This is somewhat surprising given the scheduling and staff constraints at the small school, and is largely attributable to the seven-period day that gives the students more opportunity to take additional coursework than at either Middle Class or Urban.

Table 3.8:
Total Fine Arts Credits Earned by School

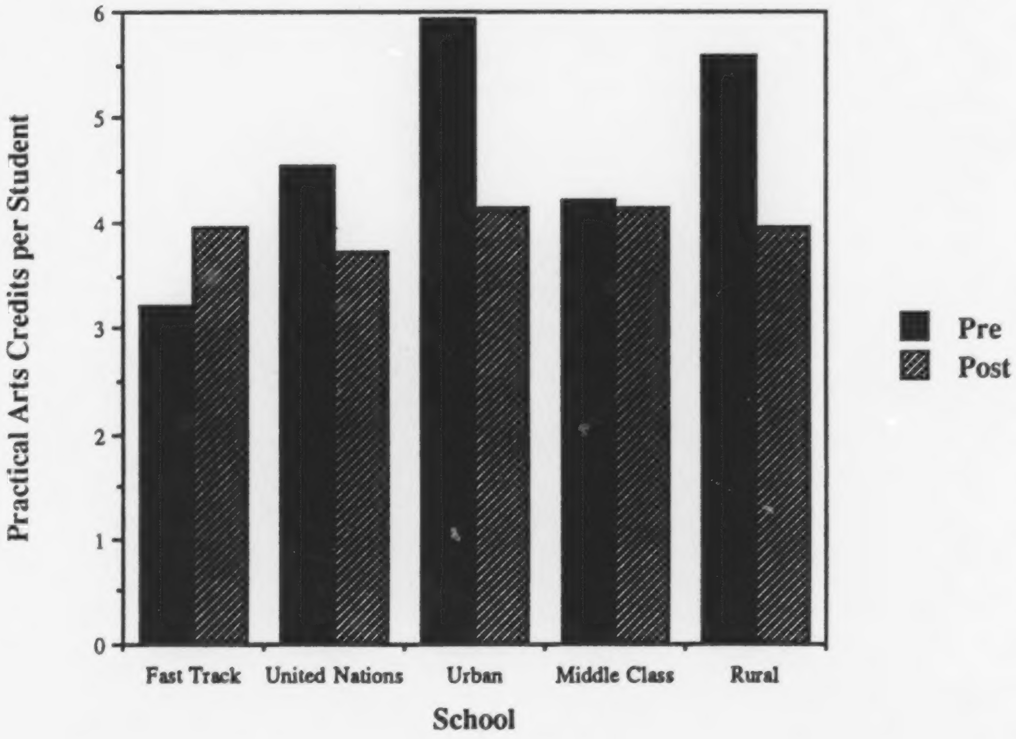


Practical arts. The policy initiative also added a practical arts requirement. Intense lobbying by various content area specialists during policy formulation led to a very broad compromise definition of what was acceptable under the general rubric of practical arts. The acronym for this requirement, CHIVE, represents four different disciplines: Computers, Home economics, Industrial, and Vocational Education. In addition, most business courses are considered acceptable under this requirement. With such a broad range of acceptable courses, it would not be surprising for students to accumulate a number of credits under this general rubric. Upon inspection of the quantitative data, that is exactly what happened. Prior to the implementation of the practical arts requirement, students had enrolled in a wide range of these courses.

The results in Table 3.9 illustrate this quite graphically. The average number of credits earned in these combined disciplines was substantially more than what the policy required. Indeed, almost all students in all five schools (94 percent) had taken at least one practical arts course in their high school career even before the requirement was put into place. There were variations in the numbers across the five schools, however. For instance, Urban students enrolled in almost twice as many practical arts classes as Fast Track students. That is not at all unexpected given the different missions of the two schools. The vast majority of Fast Track students go on to post-secondary education while the majority of Urban graduates move into the work force. The most surprising finding occurred in the number of practical arts credits students took after the policy change was implemented. In four of the five schools the average number of practical arts credits went down (albeit just a small decline at Middle Class). The schools with the biggest drop, Urban and Rural, were those schools that had the largest average practical arts enrollments prior to the policy change. The declines were substantial; at Urban practical arts credits were down by almost two credits and at Rural by a credit and a half.

Table 3.9:

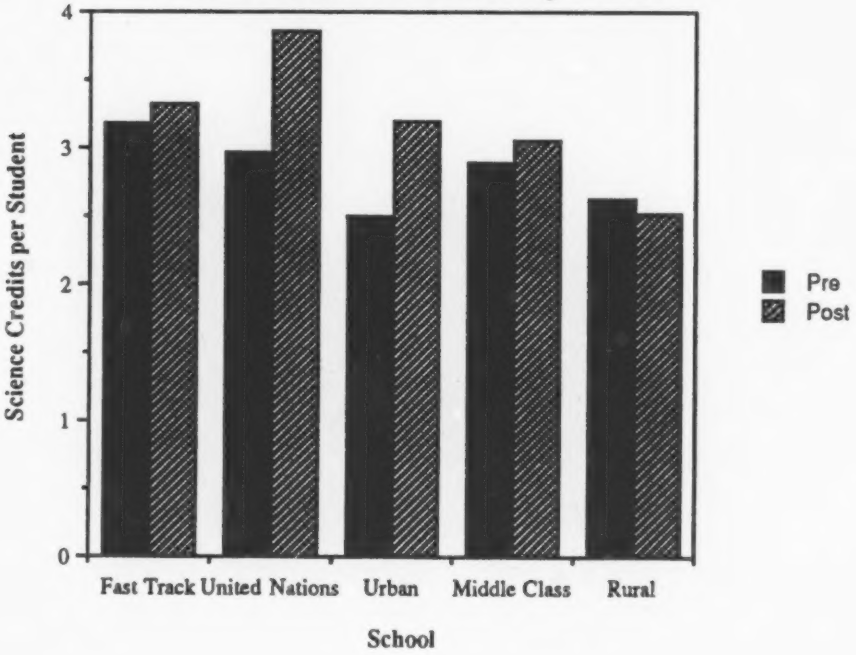
Practical Arts Credits Earned by School



Chapter 5 will discuss these declines in more detail, let it just be said here that these declines reflect the zero sum nature of curricular offerings. Even though practical arts were a key component of the new requirements, there are only so many periods in a school day and if additional requirements are added, something must be eliminated. Since these schools already clearly exceeded the minimum practical arts requirements spelled out in the new bylaw, these courses were the first to be reduced.

Science. State graduation requirements specify two science credits. That did not change. To qualify for the Certificate of Merit, however, meant earning three credits. This next set of analyses looks at how the requirement has changed students' science course-taking patterns. Table 3.10 summarizes these results. As with the math credits, the average number of science credits that students earned prior to the policy change was well beyond the two credits required by the schools. Yet, there were also some significant within-school differences. Fast Track students took the highest average science credits (3.18), clearly reflecting their college-oriented approach and colleges' expectation that students take several lab science courses. Urban High School had the lowest average science credits (2.50), which was still a half a credit more than what was required.

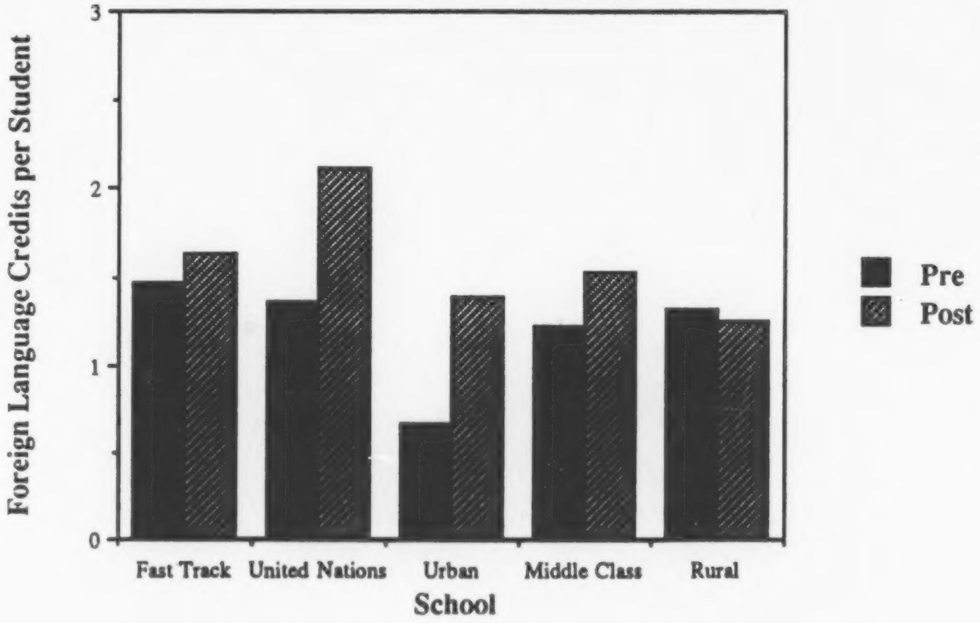
Table 3.10:
Credits Earned in Science by School



The number of science credits students earned increased in four of the five schools after the implementation of the new policy. The only school that showed a decline was Rural, where students earned an average of one-eighth of a credit less after the requirements. Fast Track and Middle Class showed equally modest increases. In each of the two schools with the largest gains, other local policies were in effect that affected science course-taking patterns. United Nations initiated a magnet program with a strong science focus and Urban required all students in the general and college preparatory tracks to take three credits of science before graduating.

Foreign language. As with the science credits, the change in foreign language requirements did not affect all students, except at Urban where one foreign language credit had been a longstanding local requirement for all students except those in vocational, business, or special education programs. In the other schools, only those students who were attempting to earn a Certificate of Merit had stipulated requirements in foreign language (one credit beyond a first year course). Prior to the policy change, students in four of the five schools earned between one and a quarter and one and a half foreign language credits (see Table 3.11). Urban High School students averaged only about half as many foreign language credits as students in the other schools, which is surprising, given the local requirement in that area.

Table 3.11:
Credits Earned in Foreign Language by School



In four of the five schools there were increases in foreign language credits earned after the policy took effect. Rural was the only school where the average did not go up, perhaps reflecting less overall interest. By far the biggest increase took place at Urban, where the average doubled. Since almost none of the students at Urban earned a Certificate of Merit, much of that increase cannot be attributed to the new state policy.

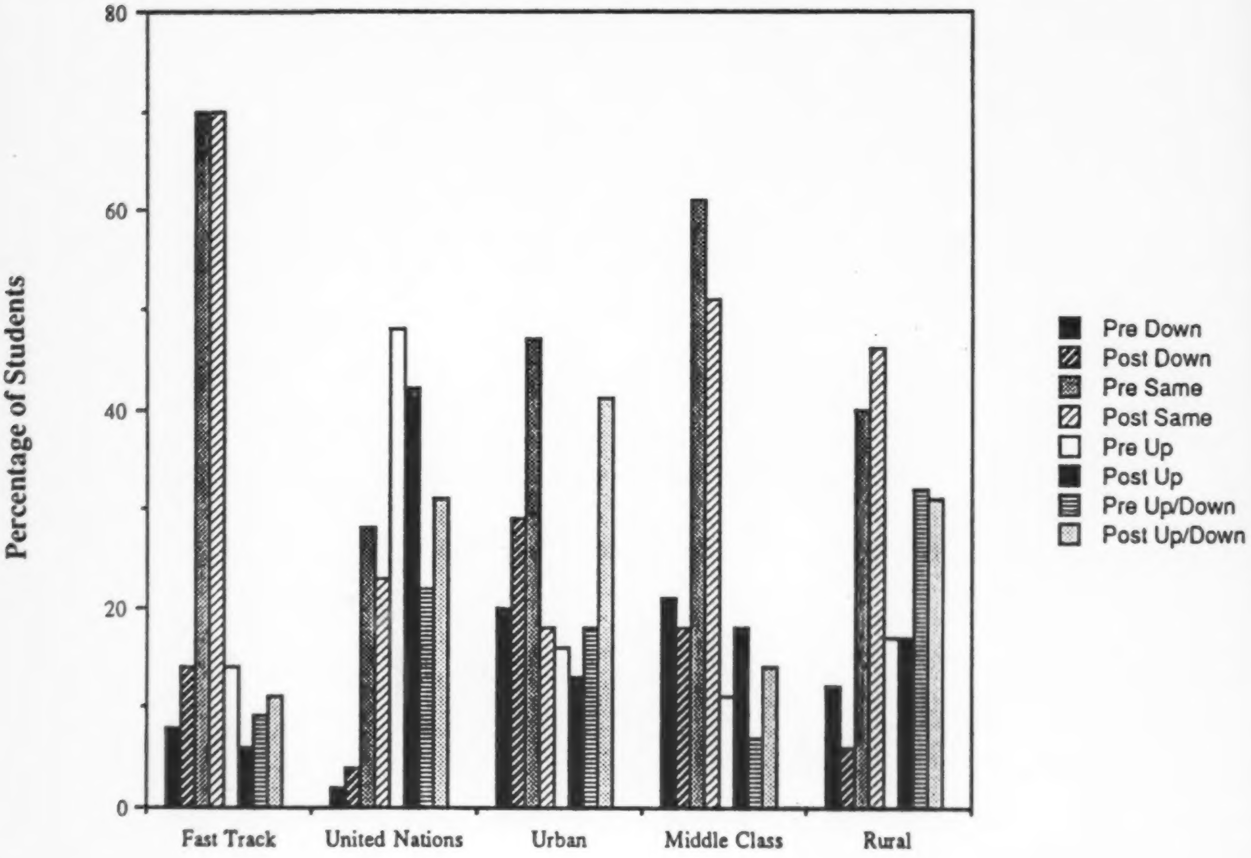
5. Has the Tracking System Been Affected?

Whether the tracking system has been differentially affected across the five schools was explored by tracking only one subject -- mathematics. The reason for this is that mathematics is the one area where fairly clear distinctions can be made about the difficulty of courses and there is general agreement upon the sequence of courses that students pursue. Each course a student took was coded by difficulty level. Four major categories were created: honors/AP, college preparatory, general, and vocational/business. By analyzing the level of difficulty across all four years of high school enrollment, researchers could determine the kinds of courses students selected, and with the four categories, chart each student's path though high school mathematics. There were four logical paths they could take. First, they could move down, as signified by enrollment in algebra I in the ninth grade (college preparatory) and perhaps in an applied math class in the 10th grade (general). Second, they could take all their mathematics courses at the same level, i.e., general or college preparatory level. Third, they could work their way up from a general course (e.g. math 9) to a college preparatory course (e.g. algebra I). A final path is for students to move both up and down at different points during their high school years.

An analysis of math course-taking patterns allowed us to assign each student into one of those four paths. Much of the literature on tracking maintains that students are pretty well locked into one track, and once in place, remain there for their entire high school career. Our coding of the transcript data allowed a much finer-grained analysis of course-taking patterns than is common in many other analyses, and let us look closely at movement across a student's four year experience. Table 3.12 depicts students' math course-taking patterns both before and after the new policy was in place. Separate bar graphs are presented for each of the four paths (down, same, up, and up and down) both before and after the new requirements were in effect.

Table 3.12:

Math Track Movement by School & by Year



Consistent with what has been reported in all the other transcript data, there is wide variation in how schools respond. This is a powerful finding. If we just look at one pattern of movement (e.g. down) for one cohort (e.g. class of 1986), we see wide variability across the five schools. The range is from a low of only 2 percent moving down for the class of 1986 at United Nations High School to a high of ten times that many (20 percent) at Urban and Middle Class High Schools. These wide fluctuations exist across all four categories of movement. For example, for the category "staying the same" (i.e. locked into a track during all math course offerings) the response ranged from a low of 28 percent at United Nations and high of 70 percent at Fast Track. Looking at it from a different perspective, students at Fast Track were two and a half times more likely to be identified consistently with the same level of difficulty in their math course selections than were students at United Nations.

While there was marked variation from school to school with respect to movement in the kinds of math courses taken, those patterns were not altered significantly by the changes in state policy. That is, the addition of the third credit in math did not dramatically affect how students were tracked in their math selections. There is one significant deviation from that pattern. Urban High School experienced some fairly dramatic shifts in patterns from pre to post. For example, while nearly half (47 percent) of the students stayed in the same track prior to the new requirements, only 18 percent did so after the third math credit took effect. Two factors help explain that pattern. First, since Urban had the lowest average number of math credits earned prior to the reform (2.2 - see Table 3.7), it had to make more adjustments to students' schedules once the reform took effect. The fact that a larger percentage of students had to add math credits meant there was more room for different responses to emerge. The other important factor was the flexibility that the state gives each local system in defining what "counts" as a math credit. In that first year of implementation, the district administration at Urban interpreted eligible math credits very liberally. Consequently, it was not at all unusual for students to take a general course in ninth grade, a college preparatory course in the tenth grade and then a vocational or business math class in the eleventh or twelfth grade.

Conclusion: The lack of coherence in course selection patterns, particularly in mathematics, inhibits students from gaining maximum academic value from their high school careers.

Recommendation 3.4: At all levels (state, district, school, classroom) there needs to be more effort made in establishing more rigorous and logically sequenced programs of studies.

These transcript analyses paint detailed portraits of various aspects of students' course-taking experiences: changes in enrollment patterns across years and subject areas, movement across curriculum tracks, patterns of advanced course enrollments and course failures. With these "more objective" assessments of student course-taking patterns clearly in mind, we turn to a discussion of students' perceptions of course-taking. Students' voices -- their sense of what these changes mean -- are presented next.

Courses and Curriculum: The Students' Voices

In this section, we take a close look at how students viewed the new requirements. Did the requirements provide new opportunities or constrain students' choices of courses? While students could not compare the new requirements to the old ones (except indirectly through opinions of older friends or siblings), they could reflect on their experiences and share their views. In 1990 we interviewed over 250 students, asking them the following kinds of questions: What they knew about the new requirements, whether there were courses they would not have taken but did because of the requirements, and whether there were courses they wanted to take but couldn't. We asked them what courses they had taken to satisfy the three new stipulations (a third credit of math, a practical arts credit, and a fine arts credit), why they had chosen those particular courses, and in what ways the courses were important to them. We also asked about the Certificate of Merit: their knowledge of it, whether they were pursuing it, what kind of students they believed pursued it. And, finally, we asked for their assessment of their high school education and how they believed the requirements had influenced that education. This analysis focuses first on general themes and then explores differences among the five high schools and, where relevant, the various tracks within each school.

1. Meeting the Requirements

In general, well over three-fourths of the students interviewed felt they had some problems meeting the graduation requirements. Among the problems they described where scheduling and not having sufficient information about the new policy early on. While students at all five schools told us about scheduling constraints, the problem was most pronounced and mentioned most frequently at Rural and Middle Class. College-bound students, who appeared most distressed by it, spoke about wanting to take specific courses but not being able to because their schedules would not allow it. Scheduling difficulties are most likely the result of a confluence of structures in each school: the number of periods per day, local course requirements, state course requirements, failures, and resultant elective opportunities. We cannot isolate all of these various influences; however, in the students' words:

> Drawing and painting? I had no choice. I wanted piano but whoever made the schedule up messed it up.
>
> There are space and scheduling problems. I don't want to take sociology or government but I have to to graduate -- scheduling problems. I wanted to take law but couldn't.

We found these scheduling concerns prevalent at Rural where there were many "singletons" (single course offerings) and little room for electives:

> I wanted to take astronomy but I couldn't. There were times when I wanted to take it but couldn't because of the schedule. I don't know if it's just scheduling but I would have liked to have typing but I couldn't fit it in. I also would have liked to take home economics but I couldn't fit it in either.
>
> [I wanted to take] advanced biology and physics but could not fit these in.

Conclusion: **Organizational constraints in schools (e.g. scheduling) restrict students' opportunities to take more courses and/or more advanced courses in some schools.**

Recommendation 3.5: **The state should encourage districts and schools to restructure in creative and flexible ways to promote the availability of more course-taking options.**

Another problem students identified was lack of information. While most students interviewed felt that they knew about the requirements in sufficient time to plan to meet them, others clearly did not have access to timely information. At all five high schools, we found pockets of students who were misinformed or insufficiently informed. One student described how she "did not know about the four credits in the senior year. I did not know until the last minute. I'm struggling to graduate; I've had trouble juggling the senior year." Another told us that, "The only thing I didn't know was that I had to take a business course in order to get work study as a senior. So, I didn't get it. Now I have to take my one required English and five electives! It should have been announced in 10th grade!" Comments such as these most often came from students at Urban, where both college-bound and business education students told us:

> There was a problem with the senior year plan. I had to take science senior year. This added one more class I did not want. Instead of taking two classes before work, I have to take three.
>
> Art -- I didn't know nothing about it until this year.
>
> I had to squeeze a lot in this year (two English).
>
> At first I didn't know about the art class. The other counselor didn't tell me about the art class. He wanted me to stay back in 10th but there was another counselor who told me I belonged in 11th. My new counselor this year told me what I needed to graduate and helped me get into Saturday School.

One particular source of confusion for Urban business students was what the school considered an acceptable math credit. Apparently the district had disallowed both accounting and business math as acceptable math credits, especially for the newly required third year. This policy was changed however, mid-way through the first semester. According to one student, "Everyone complained and they changed it back so both count for math." Another student, describing this confusion, recounted how his courses had been changed twice.

> At the beginning of the semester they said accounting and business math didn't count as math, so they put me in applied math III and Algebra I. Later on they decided to give it to us since we were seniors so I dropped the two math courses.

This particular confusion affected business education students (those likely to want to fulfill the math requirement with accounting or business math) more than others. It illustrates, however, how students may well have felt at the mercy of seemingly capricious decisionmaking processes.

In contrast to this situation at Urban, students at other schools received full, clear information early on and in sufficient detail for them to plan their programs. These reports came from all five schools:

> They tell you in ninth grade -- counselors' meeting. They tell you more so now than when I was in ninth grade. It's gotten much better.
>
> I knew all of them when I was in eighth grade. I have an older sister who went through all this.
>
> I knew in eighth grade. Every year the counselor came in. This year they reviewed it very carefully with us.

However, one student spoke for many when he said, "When you're a freshman you really didn't understand exactly what it was. You take all the classes you want without really thinking about it [the requirements] and then when you're a senior, you find out that you took everything you needed anyway."

As mentioned earlier in the chapter (see section on early implementation), Fast Track seemed to have its dissemination function well organized:

> I knew in the eighth grade. Each year they tell you [e.g., I had to take a PE this year]. Guidance lets you know.
>
> Yes. They told us at the middle school.
>
> Yes, I knew about them in eighth grade. The counselors came to school. Every year you get a booklet that has course descriptions and requirements inside.

It was rare to find a student at Fast Track complaining about a lack of information. Much of this dissemination effort, however, focused on the Certificate of Merit, fostering that school's high pressure environment.

Conclusion: Information flow is erratic and inadequate in some schools, including information about the Certificate of Merit. Students at-risk (minority, low performers, sometimes girls) receive the least adequate information in some schools. Teachers' and especially counselors' role in dissemination of information is crucial.

Recommendation 3.6: Counselors should be freed from routine paperwork and other administrative responsibilities that preclude spending time with students individually or in groups.

2. The Fine Arts and Practical Arts Credit

Across all five high schools, a small proportion of the students took fine arts and practical arts courses simply to meet the requirement. Some students reported that this turned out to be valuable; others that it was a waste of time. In many cases when we asked the students which specific courses they took to fulfill these two requirements, they described a particular course and then discussed how much they enjoyed it. And, in many cases, these same students described how the new requirements had enriched their high school experiences by forcing their exposure to an area they might not have otherwise investigated. Students said:

> I probably wouldn't have taken a fine arts course but I ended up really liking it.
>
> Art -- the fine arts requirement and the practical arts requirement. They ended up being helpful even though I didn't want to take them. I ended up taking two years of art because it was wonderful.
>
> The requirements encouraged me to become more well-rounded because I have had to take a variety of courses; I couldn't narrow my options. It opened my mind to a lot of opportunities.
>
> There should be more than one practical and fine arts -- these round you more.

When we compare the five high schools, students' responses varied. At Rural, most students (close to three-fourths) reported that they selected fine arts and practical arts courses because they wanted to. The same was true of students at Fast Track. However, more students at Urban than at any other school explained that they took the courses they did in fine arts and practical arts to fulfill the requirements because their counselors told them to. In fact, this justification was rarely mentioned at the other four high schools. Since this pattern also appears in students' third-year math course selection, it deserves further elaboration here.

Many students at Urban explained that they were infrequently consulted on course selections and had only minimal involvement in their own program planning. Students were simply assigned to courses. For example here's what they said:

> The drawing/painting class? They gave it to me.
>
> Auto mechanics -- I was put there. I failed a business class so the counselor put me in auto mechanics the following year.
>
> They never told me [about the requirements.] They just said 'here are your classes.'
>
> There's not too much you can take here. You just take what they give you to get your diploma.
>
> Art/designs -- the counselor gave it to me. They gave me home economics because I finished PE credits and it was the only class open.
>
> I wanted to take home ec but I couldn't take it because they didn't have another half-credit class to continue the year. So they took me out of home ec and put me in sociology.
>
> Typing? The only choice I was given.
>
> Because I was in Pregnant School last year, this year I was given a schedule. I had no choice in the courses I took.

Students at Urban responded often enough this way to indicate that such course assignments were not an uncommon phenomenon. In fact, over one quarter of the students interviewed justified their course selections by saying they were told to take a particular course by their counselors.

Conclusion: Students report satisfaction with exposure to new content in the fine and practical arts areas. Students may benefit academically by taking an active role in their own course selections.

Recommendation 3.7: The state needs to continue to promote this success. They should encourage the development of additional fine arts options and they should clarify meaningful practical arts options, emphasizing those with the greatest payoff for future employment options.

3. The Third Math Credit

Students were generally muted in their feelings about taking a third year of math. As noted above, prior to the implementation of the new requirements, fully 60 percent of all the students in the five high schools were already taking at least three years of math. We probed students for their reasons for selecting a particular course, and found some variation across the five high schools. At four of the high schools, a majority of students reported that they took the third-year course because it was required rather than because they wanted to take it. This view was widespread at United Nations, where just over half the students said that they had taken the third-year math course because it was required of them. In the fifth school, Rural, over half the students reported that they had selected a particular course because they wanted to; one third said they took it because it was required. This is consistent with transcript data showing Rural students with the highest average number of math credits.

A third interesting pattern appeared at Urban where a small proportion of students -- under 15 percent -- told us that they had selected the third-year course because it was required. Students justified their math course selections at Urban in much the same way they justified their other courses -- by saying their counselors told them which courses to take. When asked why they had selected particular math courses, students reponded:

> Business math -- they gave it to me.
>
> General math -- the guidance counselor gave it to me.
>
> Algebra 1A and 1B -- since I'm in a business course, the guidance counselor said I had to take it.
>
> Algebra I, geometry, algebra II, advanced math -- because the counselor put me in that stuff. Math was stopping me from being in work study which is what I really need to do.
>
> Applied math I, II, algebra I -- the counselor gave me these courses.

These students' comments suggest that they feel they have little influence in shaping their course selections and, hence, their high school careers. There are, however, alternative ways to interpret these data. For example, courselors might be constrained by the school's course offerings, which in turn have been constrained by central curriculum decisions and by teacher shortages. Thus, the options available to any one student for his or her roster may well be quite small. However, we did not find the same pattern of responses at Rural, which had the least flexible scheduling and curricular offerings of the five high schools. Urban students may well have been voicing a generalized ennui with their high school careers. What remains troubling, nevertheless, are those students who spoke clearly and decisively about what they wanted but felt overpowered in the decision process. This reinforces Recommendation 3.5, which emphasizes the need for more coherence in the course selection patterns.

4. Views on the Certificate of Merit

Students' knowledge of the Certificate of Merit varied widely across the five high schools. At Fast Track, the Certificate was a centerpiece for curriculum and guidance. In 1986, we interviewed several students who described how they had been counseled into Certificate of Merit courses only to be failing several of them. When we returned in 1988 and 1990 we heard students tell about being in Certificate of Merit classes early on, failing, and having to "straighten out" their coursework. In addition, Fast Track students were unique in their knowledge about the Certificate, except for the very top level students, who surpassed even the extra requirements of the Certificate, and had no real need to be familiar with them. Typical Fast Track student responses are the following:

> I came here my sophomore year. The principal told me about it [the Certificate] when I was making my course selections.
>
> I've been told by my counselor that the Certificate of Merit helps you in college courses. At Towson [State University], they say it makes no difference. They can't differentiate between Certificate of Merit and regular. In a lot of courses teachers don't make any distinctions between Certificate of Merit and regular. But they say even if it doesn't help you get into college, it helps prepare you for college work. I guess with some classes it does.
>
> My freshman year I didn't learn much about it in Baltimore County. When I came here, I learned about it. Messed me up because I didn't take Certificate of Merit my freshman year -- I'll be short two classes. I added them up already.
>
> The guidance counselor has been telling us since eighth grade and we've signed up for courses. Every year the guidance counselor tells us the same thing. From what I've been told, Maryland is the only state that has it and if I go to other states and try to show that as an accomplishment, they'll be like, 'what's that?' Classes are not that much different. Some teachers may take it seriously but for the most part they teach it as a normal class.
>
> In ninth grade they told you to sign up for it to try for it but my GPA was not good enough so I said forget it. You need a language too. An extra science or math and you have to have a high GPA.

In contrast were students at Middle Class and Urban many of whom had little knowledge about the Certificate and yet told us that they were interested in earning it. Sadly, at both schoools, students repeatedly told us that they knew vaguely about the Certificate of Merit and would have wanted to earn it but that it was too late for them now. And when we asked students to tell us which students they thought were earning the Certificate of Merit, fully half of the students interviewed at Urban said above average students. This stood in marked contrast to Middle Class, where over half of the students said the Certificate of Merit was designed for "top honors students." Thus, Urban students had a more democratic concept of the Certificate -- one could be above average and earn it -- while those at Middle Class seemed to have a more elitist concept -- only the best and brightest could qualify.

Conclusion: Knowledge of what constituted more rigorous, challenging coursework was not present in all schools.

Recommendation 3.8: To insure consistent implementation of more rigorous and challenging coursework, intensive training and technical assistance by both state and local leadership is necessary.

5. The Requirements' Influence Overall

We asked the students to assess their overall education and to make a judgment about the influence of the new requirements on the quality of that education. More students at United Nations (over half) than at the other schools reported no influence from the requirements; the greatest proportion of students who said the requirements influenced them were at Urban (over three fourths) and Fast Track (under three fourths).

One explanation for students at United Nations reporting few overall effects from the graduation requirements could be the influence of the local magnet program. All students, even those not in the magnet program, considered the magnet requirements more salient and more strict than any put forward by the state. As one student stated, "Not much influence. All the magnet requirements really affect me, not the graduation requirements." Another said, "It's hard to evaluate because the requirements before were 20. The magnet requirements exceeded those requirements anyway so it didn't really change anything anyway."

United Nations students also reported that they would have taken the required courses anyway, and so the requirements were not much of a motivator:

> I went beyond the requirements anyway.
>
> I never had problems with passing classes; I would have gotten those credits anyway.
>
> I didn't think about the requirements at all. I knew I was going to take history and math all the way through.
>
> I would have done it anyway. For some of my friends it (the requirements) did help, but not me.

At Urban and Fast Track, students described how the requirements shaped their high school education. The requirements, they said, broadened their exposure to new areas by demanding a level of effort that they might not have otherwise put forward and prepared them well for college. Some college preparatory students stated they would have taken the same courses anyway because they needed them for college admissions, but the requirements were probably important motivators to others. In describing the broader exposure they got to new areas as a result of the requirements, students said:

> They forced me to take classes I needed. I learned that science is fun.
>
> Somewhat. I can't compare to anything else. I would not have taken art and math if it was not required of me to do so.
>
> Yes, because you're a little bit educated in every little thing when you leave here.
>
> The requirements made me take classes I didn't want to take but knew it would be best for me. If I didn't, I would have all electives. If English were not required for four years then people around here would be stupid.
>
> If I did not have to take some science classes, I would have never taken them.
>
> Yes. They encouraged me to become more well-rounded because I have had to take a variety of courses. I couldn't narrow my options. It opened my mind to a lot of opportunities.

These students also talked about how the requirements demanded more of them and/or of others:

> They move you in the right direction, from there I went on. It forced some to take more challenging courses. It helps prepare you for the real world.
>
> If it was my way I wouldn't take higher classes, I would have taken the easier ones.
>
> It made sure I took all the classes I need and I got to learn more.
>
> It helped set the goals and criteria I needed to meet.
>
> I would have taken four years of English, math, and social studies anyway. But for students who might not have been that excited about, for example, four years of English... Now they have to and that's good.

Students also noted how the requirements prepared them for college: "The courses I've taken have helped me prepare for college and later in life. I think I will be well prepared for college -- I hope I will be!" Thus, students' perceptions of overall effects of the requirements varied with their school.

Students spoke, at times eloquently, about their desires and aspirations, why they take particular courses, and how they view their worlds. A second group that the reform affected is teachers, both as individuals and as members of departments. We turn next to a discussion of the reform's impact on departments, followed by a look at how teachers view the policy changes.

Departmental Differences: The Master Schedules

Another way to consider the effects of the new high school graduation requirements is to look at the courses offered in each of the high schools and to document how those offerings have changed over time. Our data allow us to look at changes in course offerings between the 1984-85 school year (prior to the policy initative) and the 1989-90 school year (after the policy initiative was in place). The focus of the analysis is, first, to address whether departments are being differentially affected and, second, to look at changes over time within departments.

School master schedules are the source for this analysis. These documents report what each teacher is doing during each period of the school day. Complete data were available for only three of the five schools. While all schools had current master schedules available, two did not keep archival copies so we were unable to document their changes over time.

The results are presented in terms of full time equivalent (FTE) teaching staff. The FTE was obtained by counting the number of sections taught and dividing it by the number of sections a full-time teacher would teach during the school day. FTEs were used rather than the number of sections each teacher taught because each of the districts in the study had different numbers of periods in the school day (two had six; three had seven). This procedure also allowed us to disregard any teacher assignments that were not directly involved with delivering subject matter content. Time allocated to department chair duties, discipline or other administrative/planning activities was excluded from the computations.

Table 3.13 summarizes the FTEs by subject area for each of the three schools, comparing pre- and post-reform. The changes are mostly in the positive direction. That is, more teachers were in these departments in 1989-90 than in 1984-85. Some of the increases are quite substantial, particularly when compared to the increases in credits earned by students (see Table 3.2). One explanation for the anomaly may be shifting class sizes, something we were unable to control in the analysis. Another explanation is that the student database covers student enrollments from 1981-82 through 1988-89 while the master schedule data are from 1984-85 to 1989-90.

Table 3.13

FTE Teacher Assignments by School and Subject – Adjusted Percentage Change

	SCHOOL		
Subject	Fast Track	Middle Class	Rural
Math	+12	+14	+56
Music	+46	–01	+75
Art	+56	+68	+25
Indus. Art	+46	–10	+292
Business	+10	–25	–06
Home Econ.	+46	+51	+25
PE	+06	+06	+10
For. Lang.	+53	+30	+92
Science	+06	+01	+16
English	+12	+11	+25
Soc. Stud.	+06	+10	+25

NOTE: The adjusted change column controls for the change in total school enrollment over time. This adjusted figure is: [(Post-Pre/Pre] - Enrollment Change. The enrollment change between the 1984-85 and 1989-90 school years was as follows: Fast Track +14 percent, Middle Class –18 percent, and Rural –25 percent.

1. Are Departments Affected Differentially by the Reform?

This first question looks at the issue of variation according to academic subject area. The columns represent the percent FTE change between the 1984-85 and 1989-90 data. An adjustment was made in each of these figures to control for changes in each school's student enrollment. For example, to say that the number of sections of math went up 20 percent without taking into consideration changes in overall enrollment gives a misleading picture of real change. If enrollments increase 20 percent at the same time that the number of math sections increase 20 percent, then the two changes essentially cancel one another out. Thus, an adjustment was made to compensate for the overall enrollment shift from 1984-85 to 1989-90. In the first example, math FTE changed at Fast Track from 7.0 to 8.8; the actual change was 26 percent but the adjusted change, when taking into account enrollment increases of 14 percent, was only 12 percent (26 - 14).

The first subjects summarized are those that were directly affected by the requirements (math, fine arts, and practical arts). Next are those areas that the literature claims usually suffer when requirements change: physical education and foreign language. Those presented last are the academic areas left untouched by the requirements (with the exception of the influence of the Certificate of Merit).

The most striking finding is that in two of the three schools no single department suffered losses in the number of sections it offered. At Fast Track, the one school with losses, all the losses were concentrated in business and vocational subjects. What appears to be happening is that schools are managing to absorb changes in course requirements without reducing staff in other areas.

Some subjects experienced tremendous growth. The most obvious candidate for growth would have been math, with the change from two required credits to three. That was simply not the case. Math teacher allocations grew modestly in all three schools but nothing on the order of the 50 percent that might be expected with a 50 percent increase in course requirements. One explanation may be that many students were already taking three credits of math so only minor adjustments were necessary. As was reported earlier, students took on average 2.86 math credits before the new requirements and 3.55 credits after the requirements, a 24 percent increase.

Fine arts subjects (music and art departments) were clearly growth areas, albeit inconsistententently. At Fast Track, both music and art FTEs grew by approximately one-half. But at Middle Class only the art department saw significant gains, while at Rural it was the music department that expanded more.

In the practical arts areas, there were also important differences across the three schools. Significant growth occurred in industrial arts in two of the three schools (the massive jump at Rural is directly related to the closing of the county-wide vocational center and the absorption of many of those staff into the local schools). Home economics saw growth across all three schools. One explanation for the across the board increase in all the practical arts subjects at Fast Track is that the large college-bound population probably did not enroll in many of these courses until the requirements forced them to do so. Moreover, this is the same high school that went from a six to a seven-period day, thus giving students more flexibility in taking these kinds of courses.

Physical education, which is a department often cited as absorbing big losses because of changes in requirements, managed to hold its own in all three schools. Foreign language was a surprise winner in all three schools. One explanation for the gain in foreign language may be that for students to earn a Certificate of Merit, they had to take at least a second year of one foreign language. The three academic subject areas left pretty much untouched by the requirements (except for the third credit of science required to earn the Certificate of Merit) included English, science, and social studies. These three subjects displayed modest growth across all three schools.

2. Are There Important Differences Within Subject Areas Over Time?

While the aggregate summary data may not call attention to any significant changes, important differences may nonetheless be present, masked by the aggregation process. That is, the aggregation process may be too gross to fully capture a subject area; important changes may occur in types of courses offered within a subject area. The most likely candidate for this is mathematics. Some would argue that for college-bound students, the third credit of math was insignificant; these students were already taking it as part of their preparation for college. The same line of reasoning could claim that the biggest effect would be on those students not bound for college. Many of them, the argument goes, would have taken just the minimum number of math credits and those credits would have been in less challenging courses. Thus, most of the change in math FTEs would be in the addition of low-level courses (e.g. applied math III) to fulfill the third credit. To address this question different courses within subject areas were tallied. Table 3.14 summarizes changes in the course offerings within the math department both before and after the reform was implemented.

Table 3.14

Percentage Distribution of Math Courses by School and Level of Difficulty

	Fast Track			Middle Class			Rural		
Level of Difficulty	Pre	Post	Chg	Pre	Post	Chg	Pre	Post	Chg
Pre-Algebra	20	27	+7	52	49	–3	35	39	+4
Algebra I and beyond	80	73	–7	48	51	+3	65	61	–4

The relative distribution of math courses changed very little during the 1984-85 to 1989-90 period in all three schools, even though there were increases in staff and in course offerings. That is, the proportion of entry level courses (below algebra I) and advanced level courses (algebra I and above) remained quite stable, with at most only a seven percent increase over the six-year period. What does show a difference is the balance between entry level and advanced level courses among the three schools. At one extreme there is Fast Track with over three quarters of its math sections advanced and on the opposite end Middle Class with only one half of its math courses advanced.

A more careful analysis of individual course titles reveals further stability in course offerings. At the advanced level, all three schools offered a core sequence of algebra I, algebra II, geometry, trigonometry, and calculus. Some slight modifications surfaced (e.g. combining advanced algebra and trigonometry, or offering pre-calculus/math analysis, or computer science), but the vast majority of courses fell into the core sequence and that sequence was remarkably stable over time. At the entry level, on the other hand, some new course titles appeared after the reform was initiated. For example, rather than offering general math I and II, math III was added. Efforts were also made to ease the burden of the algebra sequence by splitting algebra I into two courses. Two of the three schools introduced an applied geometry course. Middle Class, the school with the largest proportion of entry level math courses, started up two applied courses for basic computations: math applications and consumer math.

In sampling other subject areas, some differences did emerge. For example, one school kept its foreign language course offerings in tact while another school offered the same three languages but added new AP courses. And a third school used the opportunity to introduce Latin into the curriculum.

In art, one school created additional sections of the same courses while two others took the opportunity to revamp their entire art curriculum. Both the latter schools replaced art I, II, III with new courses with a more specific content focus (e.g. commercial art, drawing). One school even switched from offering just art I and art II to offering a very diversified set of nine different semester courses. Presumably, the purpose of this latter strategy was to attract students who never before had enrolled in fine art classes.

There was wide policy variation across home economics departments in each of the three schools as well. Middle Class added one new course (home management); the bulk of its course increase came from adding more sections of the previous courses. In contrast, Rural changed a two-course sequence (home economics I and II) into eight different elective courses with titles such as basic life skills, basic wear and care, fashion trends and merchandising, and nutrition: a way of life.

These analyses describe departments in three high schools. They reveal more growth than decline but with variation between departments and schools. It is curious that early in the reform process teachers predicted dire consequences for some departments; their predictions have not materialized. These concerns, however, persist. In the next section, we focus on how teachers view possible changes to their departments and to the curriculum.

Curricular Change: The Teachers' Views

As discussed above, one persistent goal of the research was to discover, document, and describe local variations in perceptions about the policy change. We are particularly interested in teachers' perceptions of the curricular changes since it is they who are most significantly affected by the changes. We are also interested in how their views may or may not have changed over time, particularly as structures and processes to support the new requirements became institutionalized in the fabric of the schools. We are most interested, however, in determining whether, and in what ways, teachers' perspectives on the policy changes vary across the five schools. We are confident that such analyses will inform future policy deliberations, promoting policy development that is more sensitive to local context.

We structured the interviews with teachers to capture their perceptions in fairly open-ended ways, probing for more detail and clarification where appropriate. Three sets of interviews were conducted in each school. The first took place in 1986, just after the policy had been mandated but before there was much local level response. The latter two rounds of data collection yielded richer information about local response to the policy, and it is these interviews, 74 conducted in 1988 and 174 in 1990, that form the nucleus of our analysis.

1. Changes in Departments

The research design and sampling plan called for interviews with teachers from all departments, with particular emphasis on those departments most likely to be affected by the new requirments: math, practical arts (home economics, industrial arts, and business education), fine arts (art and music), and foreign languages (because of the Certificate of Merit). Interview questions were designed to elicit teachers' views about how the new requirements were affecting the curriculum in their departments (new courses developed, curriculum revision, enrollment shifts, and the like), and whether there were changes in staffing patterns in their departments (increases or decreases in staff, sharing staff with other departments, concerns about trends). First, we will explore curriculum and staffing changes that schools experienced in common, and then we will explore how the changes varied between schools.

Common patterns among schools. Comparing interviews conducted in 1988 and 1990, reveals minor shifts in teachers' perceptions over time about how the new requirements had changed curriculum. In 1988, nearly half of the teachers interviewed (44 percent) believed that the new requirements had made substantial changes in the curriculum; a third (34 percent) said that there were no appreciable effects; and about a fifth (22 percent) said that recent curriculum changes were not due to the new requirements. By 1990, these proportions had shifted: fewer teachers overall (33 percent) reported ongoing curriculum changes while more (45 percent) described no substantial changes. About the same proportion (22 percent) reported continuous curriculum adjustments due to some force other than the new graduation requirements.

Teachers identified several types of curriculum changes including within-department enrollment shifts with more students taking introductory courses, between-department enrollment shifts, new course development, curriculum revision, and organizational changes such as modifications in the length of class periods or the number of periods in the school day. Those teachers who reported curriculum changes caused by forces other than the new requirements offered four explanations: declines in enrollment due to shifting demographics, school-level internal processes for curriculum evaluation and revision, district initiatives, and larger economic forces. These categories were consistent across both 1988 and 1990.

The institutionalization process is one possible explanation for these modest shifts in teachers' perceptions of curriculum effects. That is, identification of Certificate of Merit courses, development of third-year general math courses and introductory fine arts classes, evaluation of courses for fulfillment of the practical arts requirement, and installation of procedures for monitoring student progress toward the Certificate of Merit were all adjustments substantially made during the first two years of implementation. By the end of the third year -- May, 1988 when the data were gathered -- many of these changes had been routinized; by 1990 many were institutionalized.

The fact that the teachers were divided in their thinking about whether or not the new requirements were having curricular effects deserves elaboration. Closer inspection of the interview data suggests that the bulk of these differences in opinion reflect the experiences of teachers in different departments. We found very few reported effects in English, social studies (after removing the effects due to the state's new citizenship test), and science. Teachers from these departments tended to report minimal or no curricular changes due to the state's new requirements, or to the addition of the Certificate of Merit. In contrast, we consistently heard about changes in the math and fine arts departments; perspectives from practical arts departments varied. From math and fine arts teachers we heard about the need to develop and offer new courses, shifts in student enrollment patterns with more students taking introductory courses than advanced ones, and some changes in staffing.

Most teachers who reported ongoing effects in 1990 were involved in designing interesting and challenging third-year general math courses or new introductory fine arts or practical arts classes -- courses that had been offered for the first time during the 1987-88 academic year for then-current juniors.

Conclusion: **Internal redistribution of courses from advanced to introductory, survey, or lower-level courses occurred in some schools.**

Recommendation 3.9: **The state should provide training and technical assistance to ensure rigorous, challenging, engaging, and well-conceived introductory, survey, and lower-level courses.**

Math. Typical of math department teachers' responses were those from United Nations regarding a new course to expose non-college bound students to the principles of geometry and algebra. The course satisfied a third year math requirement for these students. In describing this course, teachers noted that, "This course allows for some limited success for low achievers who might have a chance for college," and "[The course] has given more time to students to master the objectives....It appears very successful. It's enabling students that would not normally take Geometry and gives them some exposure to that."

Teachers also emphasized the great amount of staff time and effort that had gone into developing the course. "Large amounts of people worked to put this [course] together during the summer," and "We had to have teachers trained for the course. It involves computers so training was necessary. There were a number of volunteers to take the training so teachers were not recruited."

Small staffing adjustments were also made at United Nations as a result of the new requirements: "We do have more teachers and students because of the third credit;" "The increase in math enrollment [because of the third year] has led to one position added." Responses from math teachers in the other four high schools included:

> When I first started teaching applied geometry, there were small class sizes. [This] has increased significantly, in applied geometry by 10-12 students. In the past, [we] offered three sections; this year we only offered two but there were 36 students in each....In our schools we have not [designed a new class] but we are now doing work to develop pre-calculus. [There will be] new courses next semester -- trigonometry and probability and statistics. We want to introduce this to help students continue with math without having to do advanced math....We have a vacancy here now but no adjustments in staffing. We have a sub covering the vacancy.
>
> [The new math requirement] needs creative scheduling [because of six-period day]. We need to make sure they have taken previous courses in sequence. Each math teacher has to go to the guidance office and go through each student's records to see that they have taken prerequisites. Math teachers do this to further check counselor's work. They are concerned that if students (seniors) miss the sequence, they may not graduate.

> [We moved from a] seven-period to an eight-period day. [This] gives students the opportunity to take more courses. Everything (scheduling) is done in order to get the students their requirements. For example, algebra 1, algebra 2, pre-algebra, math 9, and geometry are offered every period of the day. [There's been] some effect on general math -- we have just rewritten the curriculum to minimize overlap....We've moved to higher levels. The biggest problem is motivation. The levels are there (content differentiation); just getting them excited is the hard part.

Fine arts. Art and music teachers at Middle Class expressed views about the new requirments that were typical of fine arts teachers. Teachers interviewed said that the new requirements had shifted the curriculum so that now they offered a greater number of introductory courses and fewer advanced courses. They noted that students had less room for electives (the school operates on a six-period day) now; advanced courses were suffering. Overall, no particular changes in staffing patterns were noted, although some courses had large enrollments. One teacher was particularly eloquent about the changes:

> The message is that you can't be both -- [fine arts] talent and academic talent -- the requirements favor academic talent. [The requirements] lead to creating courses designed to attract less able students. We are less interested in working with these students but they are a means to an end. One advantage [of the requirements] is that the fine arts credit was a good move. It keeps kids taking art or music classes and therefore keeps jobs. The requirements have helped keep us employed.

Teachers from the other schools echoed these concerns:

> The course in the county [Fast Track's] that was implemented to satisfy the requirements is art survey. The course is not an art history solely; a combination of aesthetics, studio, and history. We get a different kind of student than in a normal course -- difficult to teach it. They appreciate trying things with lowered expectations. We're getting a certain percentage of college bound in the course. We love it but lose them to academic courses even with the seven-period day.
>
> The fine arts requirement? What a disaster. It sounded so wonderful but it isn't working. We're performers and we're taking a licking. I go out with kids who can't sing. It's a fine thing to have kids in class who can't sing, but the children I trained this year can't come back because the computer says they've already taken a fine arts class! The computer is god! Special bussing is another culprit. We can't get kids to stay after school; we're no longer a neighborhood school.

> [The art department has seen] huge enrollment increases, classes up to capacity. But no budget increase came with this -- a point of irritation. Fundamentals of art (a survey of many arts/crafts) may be new. It's very successful, a good introduction to arts.
>
> My numbers are less now than they used to be, the last two years particularly. [It's] because of scheduling. The addition of too many AP and Honors courses is making the schedule difficult to work with. More offerings in a small school messes up the schedule.

Practical arts. Practical arts teachers' reports about changes as a result of the new requirements were much more mixed. They mentioned new courses and increasing enrollments, but also worried about declining enrollments and loss of teachers. Responses varied across the five schools and reflected a dynamic of internal competition that the new requirements set up. Industrial arts departments competed with business education and home economics. The overall perception was that the increased number of required courses put these "elective" departments at considerable risk.

Interviews with practical arts teachers at Rural are illustrative. A business teacher said that students were signing up for both practical and fine arts courses much more now than before because they needed to fulfill the requirements. "Now kids need my credits. Art used to have a problem. Kids would say 'I don't need your credit, your class.' Now they do need it. It gives some value there."

Thus, more college preparatory students were taking practical arts courses. A teacher new to the school reported that both practical and fine arts courses had been a "dumping ground." In his view, students very rarely elected those courses; instead, "administrators, teachers, and guidance counselors steer them in this direction." And those so steered were overwhelmingly those with discipline problems. Another practical arts teacher echoed this perspective, noting that "traditionally problem students were put into home economics and shop."

Overcoming such perceptions was a major effort, but the new requirements helped. Designing curricula in home economics and other practical arts that would appeal to college-oriented students was a challenge for teachers. One home economics teacher, who was asked by the principal to update the entire curriculum, said that the major need of the curriculum assessment and redesign was to "serve more students" rather than to respond to the new practical arts requirement. From industrial arts teachers we heard these views:

> The requirement of a practical art credit changed but classes did not. It's as though there were no practical arts requirements. Students opt for computers or business to fill this requirement.

> We sell our program by working in Awards Night, guest presentors, and an outstanding senior award.
>
> [Industrial arts] is undergoing changes which will occur in three or four years -- a national trend not because of requirements. Industrial arts has been more hands-on. [Now] it's shifting to problem-solving, process oriented work. Robotics, computers. Maryland, Pennsylvania, Delaware, parts of New Jersey, are all changing drastically. Major revisions, rethinking -- goals, philosophy, processes. We haven't done this since 1946. [We are moving from] manual arts to Industrial arts to industrial technology.

And from business education teachers came these responses:

> [It's] hard to say. Business is an elective. Depending on the grade level of the study, in 9th and 10th grade classes, it has helped us and hurt us. Ninth graders are in such a tight schedule. Most are taking typing. If they want to go on to computers or more technical fields, they have to have typing. It also keeps them from taking other courses.
>
> The curriculum has not changed; the number of students enrolled has lessened considerably. That's disastrous especially for kids in this school who are geared to work. A direct result of the new requirements....I've lost, lost, lost [staff]. Six years ago we had 13; down to seven now. We should have an academic curriculum. Kids decide in their junior year that they don't want academic and can't get into business then. But academic planning is crucial. We should make them decide when they first come here.
>
> Enrollment is dropping drastically.... Teachers who are getting surplussed go to another school. In the future we might lose our jobs. I am not teaching on a full load because of enrollments. We lost a classroom to another department; we are competing with the computer class. We need to get re-certified in a different area to keep [our] jobs.

From home economics teachers, we heard the following:

> I was added as a part-time person in home economics; one year was full-time. I was added because of expanding enrollment -- the addition of one period per day [led to] increasing electives.
>
> Most kids think they'll get the one year over with. I ask them if they will be taking home ec next year and they say "Oh, I already have my practical arts credit."

> We're always overloaded second semester. Our courses are a dumping ground for failures from academic courses in the first semester.

A foreign language teacher at United Nations made a comment characteristic of faculty in departments with no changes or changes due to some other factors:

> There has been an increase in the number of courses. We are aiming to get more people to take AP courses so we adjust the curriculum to fill in the gaps kids need to take the AP test. This could be the root of any curriculum changes rather than increased graduation requirements. Nothing brand new has been added but there have been constant adjustments.

Similar reports emanated from Fast Track during all three of our site visits:

> Social studies is not really affected that much. The Maryland state colleges require a credit in world history [so we've] definitely seen increasing enrollment there.
>
> The Certificate of Merit courses are the same thing as previous advanced courses. They'd be ranked the same way at other schools. It has just given a name to something that we've had for a long time. Actual subject matter hasn't changed.

Thus, the major overall pattern in teacher interviews across two years at the five high schools revealed substantial departmental differences in teachers' views of curriculum effects, with math, practical arts, and fine arts teachers typically describing adjustments more consistently than teachers from other departments. This summary, however, masks some variation among the five high schools, as well as shifts over time. We next turn to a discussion of that variation.

Variation between schools. Some differences were uncovered when teacher interviews from the five schools were analyzed separately. First, in both 1988 and 1990, Urban and Middle Class had the highest proportion of teachers reporting substantial curriculum changes due to the requirements. These schools also had considerable proportions of teachers reporting no changes at all. In 1988, about two-thirds of the teachers interviewed at Urban (64 percent) and Middle Class (63 percent) described curriculum effects caused by the new requirements. The most frequently mentioned changes at Urban were enrollment shifts and the addition of new courses; Middle Class teachers also described enrollment shifts, but they also mentioned initiatives to rewrite the curriculum as a result of the new requirements.

By 1990, once again there were some modest shifts. Urban and Middle Class teachers continued to identify substantial curriculum changes in response to the new requirements, but the proportions had fallen from 64 percent to 48 percent at Urban, and from 63 percent to 36 percent at Middle Class. In these two schools, then, as changes and adjustments in the curriculum became institutionalized, teachers' reports of change declined. This prompts three questions: (1) Are the clusters of responses typical of the departmental pattern described for the schools overall, or is there some other explanation? (2) Given that Urban teachers had very low levels of information regarding the new requirements in 1986, how can we account for such high levels of reported effects in 1988 and 1990? (3) In what ways are the responses of individual teachers at Middle Class similar to those at Urban, or different?

These two schools stand in contrast to United Nations and Rural where substantial proportions of teachers reported that their schools had made no curriculum changes at all in response to the new requirements. In 1988, at both schools nearly half of all teachers interviewed reported no effects. By 1990 at Rural, the proportion rose from 45 percent to 67 percent. Even more telling is that, by 1990 only a handful of teachers at Rural (less than nine percent, a decrease from 27 percent) talked about any curricular effects at all. Meanwhile at United Nations, the proportion reporting curriculum changes had increased to nearly one half. Thus, Rural teachers reported decreased curriculum effects; United Nations teachers reported an increase. Two interesting questions emerge: (1) Given the vast contextual differences in the schools, how can we explain the mid-implementation (1988) similarities in teachers' responses? and (2) What do responses about curriculum effects suggest about the two schools?

Fast Track teachers, on yet another local variant, described ongoing curriculum changes but consistently attributed them to other causes. In 1988, nearly half of the teachers interviewed told of curriculum revisions and adjustments but said the changes were precipitated by events other than the new requirements. By 1990, the proportion had dropped a bit (to 40 percent). And while some teachers described curriculum changes carried out in response to the requirements, their proportion dropped from over one third (33 percent) in 1988 to under one tenth (9 percent) in 1990. The major question we need to ask about Fast Track is why this school's reports are substantially different from those of the other four high schools.

The contextual differences among the schools provide some possible explanations for these differences. Both Urban and Middle Class teachers discussed curriculum changes due to the requirements, more so than teachers in the other three high schools. Middle Class was operating on a six-period day. Teachers went into some detail about how this put enormous pressure on students to pass every class, to take few electives, and to be sure that they met the requirements as promptly as possible. With so little room in the schedule for new courses, it seems likely that teachers would consider the stricter requirements squeezing an already tightly-structured curriculum. Middle Class also experienced substantial declines in student enrollment over the five years of the study: enrollment dropped from 1,417 students in 1985-86 to 1,152 students in 1989-90. It is possible that teachers perceived changes caused by that decline to be the result of the new requirements.

Urban is a more difficult school to explain. In the first round of data collection (1986), we were struck by the lack of knowledge teachers, administrators, counselors, and students had about the requirements. The lack of teachers' knowledge was particularly noticeable. By 1988 however, a large number of teachers attributed changes in the curriculum directly to the new requirements. By 1990, while still high, the proportion had declined somewhat. Our judgment is that Urban teachers interpreted any changes as curricular in nature; thus staffing declines or shifts between departments were reported as curriculum changes. The interview data support this interpretation. For example, when asked about changes in the curriculum as a result of the new requirements, a business education teacher responded, "We lost students and teachers; there was a shift from business to general." It is also likely that the changes reported were not the sort intended by the new requirements. For example, again when asked about curriculum changes, a math teacher said:

> Basically they [sic] offer the same thing they always offer. What they've done is water down the curriculum. For example, they used to have algebra 2 and trigonometry in the 11th grade. Now they have algebra 2 in the 11th grade and trigonometry and analytic geometry in 12th grade. They don't go into more depth either, because of the caliber of the students and the seniors get out in May. He's [the teacher] not going to be able to cover the entire curriculum this year.

Fast Track is located in what Firestone (1989) calls an "active user" district. Aggressively academic parents push the school to provide a substantial, college-bound program of study. Continuous renewal of the curriculum, attention to the admissions requirements of state colleges and universities as well as highly selective institutions, and strong pressure on students to take advanced courses all lead to Fast Track being at least one step ahead of the state in its graduation requirements. Thus, it is hardly surprising that teachers would describe changes in the curriculum but not attribute them to the new requirements. The school could, relatively smoothly, incorporate any new state requirements into its own requirements. Teachers noted "tinkering" with courses, especially Certificate of Merit courses, in response to some of the requirements.

Finally, Rural and United Nations, while very different schools, seemed to foster similar responses to the new requirements. Rural was unable to make substantial adjustments to accommodate the stricter requirements because of its size. That is, there was little room to design new courses, install them in the curriculum, or respond overall to a set of requirements focusing on academics. In fact, teachers described how AP students were forced to double up with students in non-AP courses because of their small number. United Nations, as a magnet school, already had in place a diversified curriculum designed to meet the multiple needs of students drawn from across the county, local students needing college preparatory and advanced courses, general students, and vocationally-oriented students. In developing the magnet curriculum, teachers had anticipated many of the demands of the Certificate of Merit and already had appropriate courses in place.

Teachers' words suggest substantial departmental differences responding to the policy changes. Clearly, those in departments most directly affected felt the most impact, although the specific school context tempered this. A shift in the course offerings of those departments to introductory, survey courses, and third-year general math courses is a noteworthy trend. Again, local capacity and entrepreneurial spirit shaped the schools' responses.

Conclusions

These views, when combined with the other analyses presented in this chapter, give us more complete, textured descriptions of the five high schools. Rural's smallness gave it both more and less flexibility to accommodate major policy changes: more, through the teachers' and students' knowledge of one another and willingness to adjust and modify, experiment and learn, to best meet students' and teachers' needs and policy demands; less, because scarce resources constrained multiple and varied curricular choices. Middle Class's rigid schedule and tracking system created sequenced pathways for students that left little room for experimentation or failure. We characterize this school's response to the new requirements as mechanistic.

Urban's challenge in meeting minimal student needs with its few and shrinking resources was almost overwhelming. In retrospect, we aren't surprised at the muted early response: given low student (and many teacher) aspirations, a limited, district-mandated curriculum, and pressing social and family problems, to respond more fully would have taken critical attention away from more pressing survival needs.

In stark contrast was Fast Track with its aggressive community, teachers, and students. Achievement -- academic only -- was the standard at Fast Track, so much so that some students were miscounseled into Certificate of Merit courses and failed them. But Fast Track's response to the new policy was full, complete, and well-orchestrated. It may well be a district and school well ahead of the state in policy considerations.

Finally, United Nations' response to the policy changes was to further differentiate among an already diverse student body. Concerns for students at-risk (or potentially at-risk) were most loudly and persistently voiced here, suggesting a responsive posture.

Conclusion: The effects of the requirements on the school curriculum were largely a function of the department and the school.

Recommendation 3.10: State policy mandates must acknowledge the inherent variability in local capacity to respond in a way that enhances opportunities for all students as opposed to a pro-forma response that aids only a few students.

These portraits help contextualize the findings in the four chapters that follow. We next discuss tracks and access to resources (Chapter 4) and students who are consistently excluded from those educational resources (Chapter 5). We then take a larger view of the policy process and discuss overall influences in that process (Chapter 6) and overall effects of the policy reform (Chapter 7). Before those larger views, however, we turn to a discussion about how opportunity is structured and scarce educational resources allocated.

CHAPTER 4:
WHO'S WINNING?
TRACKS, TRACKING SYSTEMS, AND ACCESS TO RESOURCES

The importance of local variation in response to the state's new policy on high school graduation continues to be an important theme in the discussion of all our findings. In this chapter, we turn toward a more sociological interest. Given that high schools have complex systems for sorting or stratifying students into various groups, we describe the stratification systems in place prior to the implementation of the new policy, and then document any changes in those systems. We particularly examine how the tracking systems work and whether, given a policy emphasizing the academic track, those systems become more rigid and less inclusive or whether they become more permeable and permit more upward mobility for students. We also discuss how those systems allocate the scarce resources devoted to merit courses and what changes have taken place over time.

In exploring some of those issues, we relied on transcript data from the classes of 1986 and 1989 and on interviews with students and teachers. We first describe the tracks and their permeability. Next, we provide detailed descriptions of students' views of their opportunities and constraints, the mechanisms and role groups that they see as holding the keys to more advanced courses, and the support students receive in their academic endeavors. This is complemented by a third section detailing teachers' views on how the new policy has affected student tracking. Finally, we describe access to Certificate of Merit courses as teachers discuss their promotion practices.

This chapter demonstrates that tracking systems are much more fuzzy and ambiguous (at least for the large middle groups in high schools) than conventional wisdom would have us believe, and that access to college preparatory courses is often blocked (perhaps unwittingly). One major finding is that although the new graduation policy was designed to encourage more students to take more advanced and challenging courses, full implementation of the policy may well be stymied at the school level because students think they will be discouraged in those pursuits and because teachers and counselors act as substantial gatekeepers.

Tracks and Their Rigidity

Because tracking is such a powerful force in high schools, we wanted to capture its complexity both objectively through transcript analyses and subjectively through interviews. Transcript records from the classes of 1986 and 1989 allowed a very fine-grained analysis of course-taking patterns. Recording each course separately according to four variables (subject, track, credit, and grade), permits our analysis to be much more detailed than most previous research. This section describes our exploration, through the transcript data, of movement across tracks, attempts to build a more empirically grounded definition of track, and then responds to questions asked of the transcript data in Chapter 3, but with the focus on the differential effects of track.

1. Movement Across Tracks

As noted in Chapter 3, when analyzing the sequence of math courses students took, we found considerable movement across tracks from one year to the next (see Table 3.12). In math, students are more likely to move up, down, or up and down than they are to stay the same. That finding is somewhat surprising given that mathematics is generally thought of as a fairly lockstep sequence of course offerings. Consequently, it begs the question of whether other subjects have a similar pattern.

We decided to explore that issue using science as a second subject for analysis. Science was chosen over other academic subject areas because, like mathematics, prerequisites often preclude students from enrolling in more advanced courses. There is, moreover, a general perception that students take a progressively more difficult sequence like biology, chemistry, and physics. To explore the degree to which science course-taking patterns were similar to course-taking in mathematics we cross-tabulated science movement with mathematics movement. That is, we constructed a four-by-four cell with the four categories of movement (down, same, up, up/down) for each of the two subject areas. Table 4.1 displays that four-by-four cell.

The number in each cell represents the number of students whose course-taking in math or science corresponded to the labelled movement. For example, there were 173 students in the upper left hand corner who moved "up" (i.e. took more academically rigorous courses as they progressed in their high school careers) in both math and science. In reviewing the row and column totals a fairly similar pattern appears. In both math and science less than half of the students stayed in the same track for all their courses. Indeed, in math only two out of every five students stayed in the same track while in science it was more like one in three. In both subjects, the least likely pattern of movement was downward (i.e. taking less academically rigorous courses), with only one in eight students moving downward in mathematics and one in sixteen in science. Two surprising findings were the percentage of students moving up (39 percent in science and 26 percent in mathematics) and the large number who moved both up and down (just over one in every five students).

Even more surprising than any of the findings within a given subject area is the comparison across the two subjects. If the pattern of movement across mathematics and science were consistent (i.e if one moved up in math, one would also be likely to move up in science), then the vast majority of students would fall in the four shaded cells along the diagonal. Yet the numbers reveal that only one in three students (35 percent) move the same way both subjects. That is, track movement in science is not highly correlated with track movement in mathematics.

Table 4.1

Track Movement by Subject Area

		SCIENCE			
		Up	Same	Down	Up & Down
MATH	Up	173	94	9	70
	Same	165	222	38	114
	Down	69	49	12	27
	Up & Down	116	99	20	65

35%

A similar analysis was completed for the other two academic subject areas, English and social studies. Again, students showed significant movement across tracks. Table 4.2 summarizes: (1) the proportion of students in each school who stayed in the same track (class of 1989) across all course work in each of the academic subject areas, and (2) the predominant movement for those who did not stay in the same track. In the vast majority of cases (17 of 20), half or less than half of the students stayed in the same track. The rest of the students move across tracks when making course selections. It was also apparent that there was no real consistent pattern of movement. At Fast Track, the predominant movement was downward while at United Nations it was upward; for the other three there was no clear pattern.

Table 4.2:

Proportion of Class of 1989 Whose Track Movement Stayed the Same & the Predominant Movement for Those Who Moved

	School				
SUBJECT	Fast Track	United Nations	Urban	Middle Class	Rural
Math	70 (down)	23 (up) (up/down)	18 (down) (up/down)	51 (down) (up)	46 (up/down)
Science	50 (down)	30 (up)	22 (up)	15 (up) (up/down)	34 (down) (up/down)
English	21 (down)	20 (up) (up/down)	88 —	36 (up/down)	17 (up/down)
Social Studies	6 (down)	20 (up)	65 (up/down)	35 (up) (up/down)	6 (up)
Overall Trend	(down)	(up)	(mixed)	(mixed)	(mixed)

Conclusion: Tracks are less easily defined and more permeable than previous research has suggested. Nevertheless, there is considerable movement downwards and in random patterns among tracks.

Recommendation 4.1: The state should encourage schools to creatively restructure course offerings to minimize any discriminatory effects of tracking and to encourage more upward mobility.

All of this fine-grained analysis leads to one of two conclusions: either the portrait of rigid tracks is a myth, or this analysis contains so much noise that overall patterns are obscured. We lean toward the latter conclusion. The qualitative data from students and teachers in a subsequent section convince us that tracks do exist.

2. Redefining Tracks

Most previous quantitative research relies on schools indicating which tracks students are in, students reporting which tracks they're in, or a review of the level of difficulty of one or more subjects during the senior year (e.g., students enrolled in calculus versus applied math). With access to complete student records, we were able to build an empirically grounded conception of student movement across courses throughout their four years of study. Rather than looking at individual subject areas and trends from one year to the next, we developed a more singular, aggregate indicator. Since each course was categoried as college preparatory (Certificate of Merit eligible or above), general, or vocational, we could compute three simple ratios: (1) college preparatory courses to the total number of courses; (2) the general to the total; (3) and the vocational to the total. A simultaneous review of those three ratios revealed wide variation across all three with some interesting combinations. It was clear that in addition to the "pure types" (i.e. students enrolling only in college prep, or general, or vocational courses), there were also many "mixed types." That is, students took courses in more than one category and did not fall into tidy, generic track categories.

After careful review, we developed a decision rule. A "pure type" was defined as a student who took two-and-a-half times as many credits in one category as in either of the other categories. A "mixed type" took less than a two-and-a-half times difference between the two highest categories and more than two-and-a-half times between the lowest. Finally, a mixed type student with courses from all three categories is a combination where no category was separated from another category by more than two-and-a-half times. This decision rule led to the following distribution of students across both student cohorts (classes of 1986 and 1989):

pure: college preparatory	11%
mixed: college preparatory/general	30%
mixed: college preparatory/general/vocational	20%
mixed: general/vocational	9%
pure: general	31%

It is interesting to note that there were no pure vocational students and also no mixed type college prep/vocational students.

Once these categories were established, we analyzed the effects of these track assignments on student course-taking patterns. These analyses addressed the same general questions that were outlined in the previous chapter. What is of interest here is whether or not there is a differential effect related to a student's particular curriculum track.

3. Are Students Earning More Credits?

Table 4.3 summarizes the mean number of credits students earned by school, by year, and by track (the number of cases associated with each cell for the next six tables is presented in Appendix E). From earlier analyses we know that there are significant differences by school and by year. The question is whether there are differences by track as well. There were no differences across the tracks for the students unaffected by the new state requirements (class of 1986). After the new requirements took effect some differences by track emerged. The typical pattern was for students in the general track to earn fewer credits than those in other tracks. At Fast Track there was more than a two credit difference between students in the general track (23.8 credits) and students who took college prep courses (26.0). The pattern was not quite as prominent but was still strong at both United Nations and Urban. There was almost no difference across tracks at Middle Class and Rural. What appears to be happening is that students in the general or general/vocational track are taking the bare minimum of credits and doing only what is required and little more. The biggest difference in credits taken was between college prep students (28.1) and general track students (23.7) at United Nations. This reflects the fact that many college prep students at United Nations are in the school's magnet program and enrolled in eight courses rather than the usual seven each term.

Table 4.3:

Mean Number of Credits Earned by School & Track

	CP	CP/Gen	CP/Gen/ Voc	Gen/ Voc	Gen
Fast Track					
86	—	23.7	23.9	—	23.0
89	25.9	26.1	26.0	—	23.8
United Nations					
86	25.5	25.1	25.3	24.9	23.3
89	28.1	25.0	25.5	—	23.7
Urban					
86	—	22.8	22.2	22.9	22.1
89	—	23.5	23.6	23.9	22.4
Middle Class					
86	—	22.9	23.4	22.3	22.0
89	23.5	23.2	23.3	—	23.3
Rural					
86	26.1	25.5	25.3	24.8	25.0
89	—	25.1	—	26.2	24.8

CP- College Preparatory Gen-General Voc- Vocational

Statistical effect by Track: F=76.34, $p \leq .001$

4. Are Students Struggling More?

While the findings in Chapter 3 showed that students are not struggling more as a result of the new requirements (either in terms of reduced GPAs or higher percentage of failed courses), the evidence is quite convincing that there are differential effects by track (Table 4.4). Very consistent results across all five schools show that students in the college prep classes fail the lowest proportion of courses while those in the general track fail the most. The most obvious example of this is at Fast Track where students in the general track are six times more likely to fail courses than their counterparts who take a combination of general and college prep courses. The findings clearly point out that different experiences exist in these schools depending on a student's track.

Table 4.4:

Percent of Courses Failed* by School & Track

	CP	CP/Gen	CP/Gen/ Voc	Gen/ Voc	Gen
Fast Track					
86	—	2.8	1.8	—	3.0
89	0.0	1.4	1.0	—	8.5
United Nations					
86	2.0	3.0	6.0	3.4	10.2
89	1.0	6.3	5.5	—	12.3
Urban					
86	—	6.0	6.2	6.2	9.9
89	—	2.6	2.6	1.2	7.1
Middle Class					
86	—	2.9	1.5	6.1	8.2
89	1.0	2.8	4.0	—	5.6
Rural					
86	2.9	3.6	5.0	5.7	6.6
89	—	3.8	—	4.4	8.3

CP- College Preparatory Gen-General Voc- Vocational

* This figure is the average of the ratio of failed courses to the total number of courses taken for students in each of the categories.

Conclusion: Students with a combination of general and vocational courses struggle more with their coursework than others.

Recommendation 4.2: The state should encourage schools to reassess their curricular offerings to ensure the success of all students.

5. Are Students Earning Different Credits Across Subject Areas?

This section focuses on specific subject areas where the new policy might have either had a direct effect because of explicit changes (math, fine arts) or an indirect effect (academic, vocational subjects).

Mathematics. Table 4.5 breaks down mathematics course-taking across the five tracks. The findings are consistent across years and schools. Students in the college prep track take the most math courses followed by those in a mixed track with some college prep. There is another drop in mathematics course-taking for students in the general track and students in the combined vocational/general track. This latter group takes the fewest math courses. The most probable explanation for this last finding is that students who are enrolled in a vocational course of study must take those courses while at the same time meeting the requirements for a general diploma. That is, they must enroll in four English, three math, three social studies, and two science courses in addition to the courses in their vocational program. This leaves them almost no flexibility for another math class. Consequently, they enroll in the barest minimum to get by.

Table 4.5:

Mean Number of Math Credits Earned by School & Track

	CP	CP/Gen	CP/Gen/ Voc	Gen/ Voc	Gen
Fast Track					
86	—	3.54	3.00	—	2.91
89	4.14	3.54	3.50	—	3.34
United Nations					
86	3.88	3.65	3.07	2.43	2.75
89	3.86	3.61	3.51	—	3.31
Urban					
86	—	3.61	1.55	1.07	2.64
89	—	4.09	3.29	3.07	3.41
Middle Class					
86	4.50	3.44	3.17	2.08	2.58
89	3.53	3.41	3.08	—	3.29
Rural					
86	4.79	4.42	3.22	2.13	2.88
89	—	4.06	—	3.50	3.91

CP- College Preparatory   Gen-General   Voc- Vocational

Fine arts. The data in Table 4.6 summarize the number of fine arts credits earned by students in the different tracks. Only one consistent difference by track is evident. Students who are enrolled in vocational courses take fewer fine arts courses than do other students. As noted with the math credits, this is undoubtedly a function of the fact that these students are sacrificing their elective options to complete the vocational requirements. The most obvious example of this is at Urban, where vocationally oriented students enrolled in almost no fine arts credits before the requirements and only took the bare minimum after the requirement was in place.

Table 4.6:

Mean Number of Fine Arts Credits Earned by School & Track

	CP	CP/Gen	CP/Gen/ Voc	Gen/ Voc	Gen
Fast Track					
86	—	2.44	1.00	—	1.93
89	1.43	2.74	1.72	—	1.88
United Nations					
86	1.38	2.55	0.98	0.36	1.92
89	2.12	2.72	1.50	—	1.86
Urban					
86	—	0.78	0.40	0.33	1.31
89	—	1.24	1.14	1.17	1.72
Middle Class					
86	0.00	1.20	0.83	0.25	1.17
89	1.49	1.69	1.75	—	1.40
Rural					
86	1.50	2.63	1.33	0.13	1.44
89	—	3.03	—	2.60	3.00

CP- College Preparatory **Gen**-General **Voc**- Vocational

Academic subjects. Since a general intent of the new policy was to increase standards, we also explore patterns of course-taking across the four academic subject areas (math, science, social studies, and English). Table 4.7 summarizes these results. The numbers represent the average total number of credits earned in the four major academic areas. The most interesting finding comes from comparing students with more of a college prep focus (college prep or college prep/general) and those with a general or general/vocational focus. Students in the former group averaged almost two more credits in academic courses than did the latter group. What is striking is general education students' apparent willingness to expand their opportunities by also taking some college preparatory courses. These are most likely students who will go to the local community college and then transfer on to a university.

Table 4.7:

Mean Number of Academic Credits Earned by School & Track

	CP	CP/Gen	CP/Gen/ Voc	Gen/ Voc	Gen
Fast Track					
86	—	15.02	14.38	—	14.28
89	15.93	15.91	15.28	—	14.03
United Nations					
86	16.29	15.44	13.39	11.86	13.05
89	17.37	14.99	13.62	—	12.79
Urban					
86	—	15.33	12.17	11.47	13.23
89	—	15.91	13.79	12.80	14.15
Middle Class					
86	—	14.84	13.13	11.08	12.28
89	15.1	14.48	11.75	—	12.47
Rural					
86	16.61	16.17	13.83	11.38	12.76
89	—	15.81	—	12.60	13.18

CP- College Preparatory Gen-General Voc- Vocational

Vocational Arts. At first glance, one might contend that the argument for this data presentation is tautological. That is, since vocational courses are a major part of practical arts requirements, then vocational students would by definition enroll in more of them. However, two factors counter this. First, the practical arts requirement included more than just vocational courses; it also included computer science, business, and home economics. But more importantly, our coding system separated the subject and the track. Thus, we were able to see that some students took a vocational course that had a college prep track associated with it (e.g. an advanced computer design course). In other words, the subject and the track assignment for that subject are independent, at least in some subject areas.

As expected, students in the vocational track take more practical arts courses, but students in the general track take a large number of practical arts courses as well (see Table 4.8). College prep students take the fewest practical arts courses. The starkest contrast was at Urban, where college prep/general students earned just above the minimum number of practical arts credits, whereas general track students earned almost four times that many, and the more vocationally oriented students almost seven times as many.

Table 4.8:

Mean Number of Practical Arts Credits Earned by School & Track

	CP	CP/Gen	CP/Gen/ Voc	Gen/ Voc	Gen
Fast Track					
86	—	1.79	5.75	—	3.39
89	4.00	3.39	5.50	—	5.50
United Nations					
86	1.95	2.30	7.64	8.64	5.08
89	2.60	3.05	6.35	—	5.23
Urban					
86	—	1.56	7.23	9.11	4.80
89	—	1.06	5.18	7.70	3.98
Middle Class					
86	2.00	1.87	6.04	9.08	4.86
89	2.41	3.02	7.83	—	6.35
Rural					
86	2.21	2.58	6.33	10.50	7.76
89	—	1.38	—	8.80	5.36

CP- College Preparatory Gen-General Voc- Vocational

Conclusion: Students in college preparatory and college preparatory/general courses participate more in the academic resources of schools than general and vocational students.

Recommendation 4.3: The state should encourage schools to creatively restructure course offerings to foster greater participation by all students in schools' academic resources.

The analyses above provide a portrait of students' pathways through high school. They yield some surprises and confirm some things we would expect. One surprise is the amount of movement across tracks -- students seem to be taking courses at various levels of difficulty depending on their need, inclination, and course availability. Another surprise is in the apparent independence of tracking in science and mathematics. These two findings challenge our traditional conceptions of lock-step tracks.

In responding to the other questions about number of credits, academic credits and so on, the data confirm what we would expect -- that students in college preparatory and college preparatory/mixed tracks use the educational resources (i.e. courses) of the school in more depth and variety than do students in the general and general mixed tracks. Thus, students with access to rigorous educational opportunities that will prepare them for college take advantage of those opportunites disproportionately.

One crucial question underlying these patterns is how students perceive their access to resources. What do they see as constraints? Who helps them get access? These questions are discussed next.

Opportunities and Constraints: The Students' Voices

Students' perspectives are crucial in understanding how school structures and norms coalesce into various formal and informal sorting mechanisms and opportunities (or lack there of). These mechanisms shaped student course-taking and, subsequently, their high school courses.

The majority (62 percent) of students interviewed stated that if they wanted to take advanced courses (i.e. move across tracks) they could. Their response fell into two categories. The more optimistic response was to embrace that freedom and take advantage of it: "Any class I've wanted to take, any option I've wanted has been available to me. No one has ever held me back from doing whatever I wanted." Another student commented: "It's up to me. If I want to, I can." The other category of response acknowledges the lack of barriers but also admits to little individual effort taken to capitalize on these opportunities. One student stated, "I'm free to [enroll in advanced level courses] but I haven't been motivated", and another said, "I'm free to but I chose to drop out -- it was too much pressure."

While in the minority, some students did claim that barriers did exist that prevented them from taking full advantage of all the opportunities that theoretically were open to them. Students talked about both formal and informal mechanisms restricting their opportunities.

1. Formal Mechanisms

Students suggested three categories of formal barriers. The first barrier was made up of adult gatekeepers -- teachers and counselors who controlled access to certain classes. The second barrier was tests that had the potential to block enrollment in courses. And, finally, the third category of barrier consisted of restrictions placed on enrollment into certain courses.

Teachers or counselors were the most frequently mentioned barrier to course enrollment. Student comments indicated that these groups were seen as gatekeepers who control access to courses:

> It's mostly the teachers who hold students back from higher classes. If they think you won't do well, they won't offer it to you.
>
> Teachers don't like you to take it [advanced courses] if you aren't able to do the work. Teachers decide who should be in or out.
>
> Sometimes teachers will discourage students who maybe can't do it.
>
> The teacher picks students. Even though I did well on the test, the teacher didn't pick me.
>
> It's your counselor who decides ... It is a major struggle to get into [advanced] classes if you are not in the program.

It was also common for students to talk about test results as a barrier to taking some courses. Tests were considered a control mechanism at both ends of the continuum of course difficulty. That is, students stated that if they don't do well, they can't gain access to advanced courses, and if they pass minimum competency tests, they will be denied access to some introductory courses:

> You can't be involved in AP classes unless you take the tests. Kids are hand picked for the tests.
>
> When I first came to the school [transfer from Catholic school], I was placed in a Certificate of Merit class. I was tested and scored lower than the other students so was removed from that class.

> I'm taking geometry for the second year [and is in danger of failing it again]. I wanted applied math but I couldn't take it because I had passed the Maryland Functional Math Test and applied math is only for people who didn't pass.
>
> Last year I wanted to take English 3 honors. I didn't pass the reading test so I couldn't stay there.

The final barrier, while not mentioned as frequently as the first two, had to do with the phenomenon of labeling. We found direct evidence of this only at Middle Class. Students talked about being identified as a particular kind of student and, once that label was applied, it was difficult to shed. Several students stated that the labels were pinned on them even before they entered high school:

> Once you come over from the middle school they phase you. Then you go in sequence.
>
> At the eighth grade orientation they gave us help [about what track they would be in]. So my path was pretty well laid out for me.

One student even commented that students in advanced level courses received preferential treatment: "I feel the [advanced] program gets a lot more attention. If we had as much as they do - if teachers put as much time into the regular courses - it would bring us up. If the teachers were more enthusiastic, students would be more enthusiastic also."

These three mechanisms -- teachers, tests, and track labels -- created procedures that (at least for some students) dampened aspirations. Perhaps even more powerful, although we have no measure of this, were the informal mechanisms -- attitudes of others encoded in norms -- that constrained and shaped student aspirations in subtle yet pervasive ways.

2. Informal Mechanisms: the Attitude of Others

When interviewing students about their high school experiences, we also asked them how others would react if they were to enroll in more challenging courses. Specifically, we sought students' views of four "significant others": teachers, counselors, peers, and parents. Students saw parents as being the most supportive and encouraging. Counselors and teachers were also generally supportive, although less so than parents. Typical positive responses included:

> Some teachers would be happy for me; they'd say I have potential. And some could care less.
>
> [My counselor would] encourage me to get into a better course.
>
> [My counselor] would jump up and down; it would be cool.
>
> My parents would throw me a party; they'd be thrilled.
>
> They [parents] would push me.

However, students also mentioned many "significant other" reactions that discouraged them from seeking more challenging course opportunities. Of the four, other students were easily the most indifferent or discouraging. Analysis of the perceptions of other students, as well as those of teachers, parents, and counselors, revealed four categories of informal barriers. The first two came from students' thoughts about how others assessed their ability and the amount of work if students were to attempt more challenging courses. The latter two barriers focused on peers and included a fear of losing social cohesiveness and social acceptability. Each of these is discussed below.

Ability. Students expressed concern about the confidence adults would have in them if they were to take advanced courses. Some judgment of capability was often the focus; that is, students wondered how parents, teachers, and counselors would evaluate them. Counselors and teachers, in particular, often were seen as assessors of ability. Students suggested that these "significant others" determine whether or not they "could handle" advanced courses. As one student stated about his/her teacher, "She knows me as a student so could estimate how well I could do." Other comments about how teachers and counselors reacted to students' ability were:

> They discourage you if they don't think your capable.
>
> They'd be worried - not sure I could do it.
>
> [The counselor would say] I don't think you would be good at it. We'll give you help, but [I'm] not hopeful.
>
> [The teacher would say] you know you can't do it, why bother.
>
> If they thought I was smart enough to pass it, they'd encourage me to. But in my case, they wouldn't encourage me.

Peers were also identified as assessors of ability, as people who "If they thought [advanced courses] were too hard for me would tell me". Students regularly expressed this in a common language: "[Friends would] probably say it was too hard for me," "They would tell me it's hard and try to talk me out of it," and "[they would] tell me not to take it; they'd think it would be too hard for me."

Grades, as a concrete reflection of ability, were often mentioned as barriers to students' taking on increasingly challenging opportunities:

> [My parents] might have concerns if my GPA goes down.
>
> A few [teachers] would think I wouldn't be able to do it because I've had some problems with grades.
>
> My counselor wouldn't allow me to take advanced courses because of previous grades.
>
> It would depend on the kind of grades you were getting. You should probably be allowed to move up if you're getting really good grades.
>
> [My counselor] would probably look and see how I did in those classes in the past and tell me if I'm capable of making it. First thing they [teachers] would do is look at my grades and tell me it's nice but your grades aren't as good as they should be to take this course.

The tone of these comments is clear. If there is any doubt about a student's ability, then the safest course of action is not to be challenged. The most obvious conclusion students draw from that message is don't go beyond the minimum; just do enough to get by.

Amount of work. Students anticipated having parents, teachers, counselors, and sometimes friends tell them if they were taking on more challenging courses than they could handle. Typical concerns were about increased pressure, amount of homework, and performance concerns:

> They'd [friends] would have thought I was crazy because it takes a lot to study for advanced and business courses.
>
> They [parents] would say take the challenge as long as I don't have to struggle too much and get in over my head.
>
> He [counselor] is afraid the work overload would be too much. He wants to make sure we do well.
>
> [My teacher would ask] why would I want to take more classes and increase the pressure on myself.

Social cohesiveness. One factor in students deciding which courses to take, it emerged in interviews, was that students often become friends with peers who enroll in classes, and they take classes to maintain contact with those friends. Taking the same classes as their friends also gives students a certain comfort level in a school. The importance placed upon students being in the same classes with their friends is illustrated in the following comments:

> They [friends] would be upset if you were leaving their classes. They would be happy if you were joining them.
>
> My friends would think I'm crazy for taking hard classes. Many feel we should be in easy classes together; we shouldn't be separated.
>
> They [friends] would think I was trying to get away from them.

Social acceptability. How students are viewed by their peers is very important because they are at an age when development of their social-self is at its peak. For example, students repeatedly used the term "nerd" in projecting peer reactions to them taking more challenging courses. It became clear that the reaction of their peers is a very strong element in students deciding whether to reach for higher levels of attainment. Students expressed this concern as follows:

> Some people tell that to others, like magnet students. They are nerds, don't have any friends, their friends are their books.
>
> Some friends would think I was a nerd-bucket.
>
> They would call me a nerd because I'm doing more than the minimum.

There was also some criticism directed to seniors who worked too hard. The acceptable norm was to take a light load during the senior year:

> Are you nuts? It's your last year.
>
> You're crazy - lots of kids slack off senior year.

Conclusion: Students generally perceived few barriers to taking advanced courses. Those identifying barriers cited formal gatekeepers, tests, labeling, and informal norms for appropriate expectations. These barriers are often inadvertantly created by teachers and counselors.

Recommendation 4.4: Teachers and counselors play crucial roles in fostering academic course-taking. District leadership, with the assistance of the state, should provide training and technical assistance to ensure that teachers and counselors exhibit equity in advising students and increase their expectations of them.

Recommendation 4.5: Organizational and staff development should be undertaken to analyze and alter school cultures in an effort to foster higher expectations for all students among staff and students alike.

Building a sense of identity and belonging is an important part of the socialization process in high school. Much of that identity comes from friendships. Until a new culture pervades high schools so that learning and achievement define student belonging, factors like social cohesiveness and acceptability will continue to influence students' course choices.

Taken together then, formal and informal mechanisms at the five high schools constrained, to varying extents, the hopes and aspirations of at least some students. These students were given a signal that they might best stay right where they were rather than aspire to too much.

Next, we turn to teachers' views on the tracking systems and whether the new requirements softened or made those tracks more rigid.

Effects on the Tracking System: Teachers' Views

An equal number of teachers and administrators felt that tracking had and had not been affected by the new requirements, while slightly more counselors perceived that tracking had been affected. However, the percentage of teachers who said that tracking system had been affected in 1990 had almost tripled since the question was first asked in 1988, suggesting that tracking had indeed changed, although exactly how remains unclear. Equal numbers of teachers and administrators said that there were both more tracks and less tracks; counselors said they thought tracking had decreased as a result of the new requirements.

One teacher said there is "more flexibility -- lots of options with practical arts/home economics offerrings means I now have more academic diversity in my classes." And another teacher commented that "the four senior year credits forces broader course-taking patterns."

When addressing tracking and the new requirements, most people talked about the Certificate of Merit, however. Comments were mixed regarding the direction that the change in tracking had brought on. While several teachers used terms such as "more flexibility", "less resistance", "more options available", and "more maneuverability", others indicated that tracking had become much more "rigid" and "fine-tuned".

Interestingly, however, this was rarely attributed to teachers or other school factors, but to parents and students' self-tracking. For instance:

> There is definitely more tracking; in the sense that kids track themselves. There is more of an opportunity for self-tracking which could be positive or negative.
>
> We don't track in this school, but it is happening; it's parent or self-imposed.

> I hear about parents who are pushing for their kids to be in higher track courses.
>
> It's gotten worse but not because Certificate of Merit or graduation requirements. It's all voluntary; kids choose their own track.

However, in Rural, one school factor. school size, was frequently mentioned with regard to the tracking issue. As one teacher stated, "The good students are locked into a certain set of courses because the school is so small." And as another teacher explained further, "Having more requirements tends to perpetuate tracking. Part of that is a real function of our size. We do not consciously track kids. There is only one section of any course."

Again and again, teachers discussed the Certificate of Merit as if students who took those courses were enrolled in a track in and of itself. The Certificate of Merit was referred to as another delineation in the perpetual hierarchy of courses and tracks. Several teachers stated that the Certificate of Merit "is just a new label on the same old thing. We've always tracked kids who are college-bound," and "the Certificate of Merit is a new name for the old academic track. It's exactly the same thing. What goes around comes around."

This was most apparent at Fast Track. where teachers and other school officials viewed the Certificate of Merit as "giving legitimacy to the academic track," "enhancing the academic track of students when applying to college or a job," and "forcing kids to see differences between academic prep for college vs. non-academic prep for industry." Students who pursue the Certificate of Merit at Fast Track, according to one teacher, are identified early on in the high school years: "It's not unusual by tenth grade to know which kids are going to get the Certificate of Merit."

Tracking does not necessarily have to be something negative for a school, but several teachers in Fast Track and United Nations viewed it as such, "Because instead of democratizing education, we're elitizing it. Kids are not being exposed to the same things. and there are very few places for them to all come together." And one teacher stated, "The Certificate of Merit is an attempt to give credit to students who have excelled. I'm not sure I agree with that. When you start doing those kinds of things you tend to track students more. There is a tendency to pay attention more to the student who does well rather than the ones that don't." Some school officials at Urban were also vocal about the negative impact that the Certificate of Merit could have on students, particularly given the limitations of their urban school with its drop in enrollment and staffing. According to one counselor, "Last year we had three students (who received a Certificate of Merit) and this year I think only one. We can't afford to give students some advanced classes if we don't have enough students to fill them."

Conclusion: **The Certificate of Merit, when made synonymous with college preparatory, made tracks more visible and, to some staff and students, more rigid.**

Recommendation 4.6: **The state should educate local staff about the subtle and complex ways in which tracks are defined in schools and should continue to sensitize local staff to the detrimental effects of labeling students.**

The teachers' confounding of the college preparatory track and the Certificate of Merit is, of course, understandable. In fact, in at least two of the high schools, the two tracks were synonymous. At Urban and Rural there were sharper distinctions. We were curious about the confounding, as well as about other structures that supported the Certificate of Merit and perceptions about its accessibility. These are discussed next.

Certificate of Merit or Not? The Allocation of a Scarce Resource

Because the creation of a Certificate of Merit was potentially a quite visible reform, we paid particular attention to it over the years. We were especially interested in the spread of information about it throughout the five schools, ways that knowledge was disseminated and received, and overall perceptions of the merit, if you will, of the Merit. Each of these aspects is discussed in turn.

1. Extent of Knowledge About the Certificate of Merit

Virtually all administrators and counselors interviewed were aware of the Certificate of Merit. Somewhat surprisingly, however, one quarter of all teachers did not know about it in both 1988 and 1990. This ignorance has clear implications for student awareness as well, because in many cases teachers are the primary disseminators of information within a school, serving as the link between policy, administration, and students. If teachers don't know about the Certificate of Merit, they can't tell students about it or encourage them to obtain it.

In fact, in many cases students reported hearing about the Certificate of Merit first, and then asking their teachers about it. As one veteran teacher stated, "I had to ask what the Certificate of Merit was when a student asked me. Nothing was said about it." Another said, "Some kids asked me in homeroom and I told them they would have to see their counselors."

Although many teachers believed they had a clear understanding of the Certificate of Merit, their responses indicated otherwise. For instance, one teacher said it "allows those going to college to waive certain courses", apparently confusing it with advanced placement courses. Another stated that, "it is for students who can't meet the academic requirements;

they are given a certificate instead of a diploma," confusing it with the certificate of attendance offered to special education students. When asked about their familiarity with the Certificate of Merit, most students indicated that they had only partial or no knowledge of it.

Students' knowledge about the Certificate of Merit did not improve between 1988 and 1990. Their lack of familitarity with the Certificate of Merit was exemplified when interviewers asked them to name its components. Most student responses were vague and, like the teachers' statements above, full of misinformation.

While this lack of awareness among teachers and students existed in all schools, it did so to varying degrees. Fast Track was on one end of the continuum, with the best knowledge about the Certificate of Merit, while Urban was at the other end, with the least knowledge of it. At Urban, 25 percent of the students had partial knowledge of the Certificate of Merit and 65 percent had no knowledge of it at all.

Awareness of the Certificate of Merit not only varied by school, but by academic program or track as well. Students taking college prep courses were most knowledgeable about the Certificate of Merit, while students taking more general and vocational courses overwhelmingly had no knowledge it. This suggests that, once again, students in the higher tracks are privy to information which others are not.

Many different local factors compounded this variation in awareness of the Certificate of Merit, including the presence in Middle Class and Urban of other certificates. For instance, at Middle Class the county certificate was often confused with the Certificate of Merit because students were much more aware of it. As one respondent stated, "We push more toward the county certificate here; chances are that kids don't know about the Certificate of Merit". Students striving for county (academic or advanced academic) certificates at Middle Class are required to complete 24 credits and take a specified number of foreign language or advanced placement courses. No grade point average is specified.

At Urban students knew about a special Urban diploma but had little awareness of the Certificate of Merit. The Urban diploma requires students to graduate with 24 credits by passing all six credits they take each year of high school. It does not specify the types of courses that students must pass or a particular grade point average. The Urban diploma was created as an "incentive for students to pass everything they take and to make sure they take as many credits as possible because most kids just want to take 20 credits and get out."

2. Formal and Informal Dissemination of Certificate of Merit Information

Compounding students' lack of knowledge about the Certificate of Merit was the way this information had been disseminated. Almost one-fourth of the students found out about the Certificate of Merit from their counselors. Others reported finding out about it in many different ways. At United

Nations and Middle Class. for instance, Certificate of Merit courses are designated on student report cards. For many students, this was their introduction to the program. As they told us:

> I see it on my report card and I don't know what it is. I ask people about it, but no one seems to know.
>
> This is the first time I really knew what it was [in the interview]. I received a printout from the counselor that said how many Certificate of Merit courses I had taken. It's not something people really talk about. At this school [United Nations] people are more concerned about graduating. I know a handful of people who said they were going to take this science so they can get a Certificate of Merit.
>
> It's just something on the report card. No one has explained what it means. It doesn't mean anything. It's no catalyst for us to work harder.

The dissemination of Certificate of Merit information was spotty in most schools. Teachers reported uncertainty as to how the information was circulated to students -- "it's not done systematically." This was not true at Fast Track, however, where students pursued the Certificate of Merit much more aggressively than students in other schools. This may be because the information was disseminated more systematically. In fact, parents of Fast Track students were asked to sign a form acknowledging that they understood the Certificate of Merit. Moreover, Fast Track was unlike other schools, whose teachers and counselors reported that "When kids make course selections they don't really look at whether or not it's a Certificate of Merit course; it's not a major factor at all for course selection."

While it is important to understand these formal ways of disseminating information in schools, other informal mechanisms proved to be of comparable or even greater importance. This was most clear when looking at why certain students were much more knowledgeable about the Certificate of Merit than others. Perhaps college-bound students were more likely than others to find out about the Certificate of Merit from their teachers. About one-half of the teachers we interviewed reported encouraging students to enroll in Ceritificate of Merit courses and about one half did not. Those teachers who provided encouragement said they tended to encourage students "who could handle it." However, in most cases those students identified as being able to "handle it" included mostly college-bound or honors students. As one teacher stated, "If I taught ninth graders, I would go after the ones that seem to be in the college-bound track." Other teachers' selective encouragement was also apparent:

> I encourage the ones that can do the work easily and who don't feel like it's an extra burden.
>
> I don't encourage lower-level students.

This was not the case in Fast Track. As one teacher there stated, "It's not necessary to encourage students. It's more of a problem getting some ninth grade students to realize they can't do the work because there is a stigma being in general classes." Fast Track may be an exception because, as we established earlier, there is such a systematic dissemination process. But enrollment in the Certificate of Merit can also be attributed to parental pressure.

> The Certificate of Merit is a status symbol. A lot of students are there [in Certificate of Merit courses] because their parents want them there for status, but they don't really belong there.
>
> My impression of the Certificate of Merit is that it's a parent pleasing kind of effort; it's good PR.
>
> Mainly the gist of the Certificate of Merit is to appease the parents. Parents think every kid is bound for John Hopkins - they're into status. That's what the Certificate of Merit is about. It's a title we give in education to make people feel better.

Although this phenomenon is most apparent and magnified at Fast Track, it seemed to exist to some extent in each of the high schools, except at Urban where parents expressed a general apathy. For instance, at United Nations, where the Certificate of Merit did not enjoy wide recognition, several teachers referred to it as "parent-sponsored to give high achievers another recognition" and "popular with parents -- a good political move." And at Rural one school official stated, "We push the Certificate of Merit in classes where kids need it but more of a push comes from parents," and another said "I don't know whether the parent wants the Certificate of Merit or the student does." A teacher at Middle Class echoed: "Kids didn't care [about the Certificate of Merit] until their parents found out about it. Parents love the little stars (denoting Certificate of Merit recipients) on the graduation program because it differentiates their children from the pack. You better not be the secretary who leaves the stars off!"

3. The Reality of the Certificate of Merit: Incentive or Incidental Accomplishment?

According to teachers and counselors, most of the students who were taking advanced courses in order to qualify for the Certificate of Merit were college-bound, in honors/AP courses, motivated, and taking the courses because their parents wanted them to. Although administrators admitted that college-bound students aimed for the Certificate of Merit, they also said that really no one purposely aimed for it; it was more of an incidental accomplishment. As one administrator stated, "Most of the kids in Certificate of Merit classes would have been there anyway; they're the college-oriented ones."

Students' perceptions confirmed this perception. After students were told about the Certificate of Merit, interviewers asked them who would be most likely to be in such courses. In both 1988 and 1990, students agreed that their peers who were college-bound, earned top honors, or were above average students were the most likely candidates. The following remarks express this.

> The only students who take it are those planning to go onto college; the Certificate of Merit's major purpose is helping college admission.
>
> College-bound students only [are aiming for the Certificate of Merit]; others don't really care.
>
> It's automatic for magnet kids.

This calls into question the original purpose of the Certificate of Merit: Was it intended to further delineate college-bound students, or to motivate more students to take college-bound courses? Administrators, counselors, and teachers agreed in varying degrees that the primary purpose of the Certificate of Merit was to be an incentive and reward (20 percent to 50 percent range for all groups between 1988 and 1990). As the data above suggest, however, whether the Certificate of Merit is indeed serving as an incentive remains uncertain. When teachers, counselors, and administrators were asked if the Certificate of Merit motivated students, they overwhelmingly replied "not at all" or "slightly". As one teacher stated, "The Certificate of Merit was probably put in to be an incentive but it really isn't." And according to another, since the addition of the Certificate of Merit, one thing has not changed: "Most kids are interested in just getting by."

Most people we interviewed agreed that the Certificate of Merit was something incidental and not a goal in and of itself. As one teacher remarked, "For the able academic kid it is just a natural offshoot; they don't set that as a goal. If it comes, it comes. It really doesn't mean much as far as goal setting for them." In another school, a teacher said, "At the end of the year, they start gathering up these kids [to receive the Certificate of Merit] who didn't even know they were eligible."

College admission and job advantages were seldom mentioned as a purpose for the Certificate of Merit. Only nine percent cited college admission advantages and three percent cited job attainment advantages.

> It is an advantage in college applications; it shows you have met more rigorous standards.

> It is probably well recognized by Maryland colleges because of the emphasis the state has put on it. The real question of success is whether employers will recognize it, and it will probably need more publicity for that to occur.
>
> In the workplace it doesn't mean anything because people don't know about it. As far as the rest of the world is concerned you either have a diploma or you don't.

Knowledge of the Certificate of Merit varied considerably both across schools and years. While we would expect greater knowledge as implementation proceeded, we remained troubled by the gaps. Students were being urged to pursue the Certificate of Merit differentially. And, as discussed earlier, informtion about Certificate of Merit-eligible courses in fine and practical arts areas was differentially available. These two findings suggest patterns that sustain privilege in academic subject areas and college preparatory tracks. Finally, the Certificate of Merit is not seen as an incentive to encourage enrollment in more rigorous courses. Taken as a whole, these findings suggest a policy feature insufficiently understood and applied.

Conclusion: Knowledge about the Certificate of Merit is erratically disseminated and inconsistently encouraged, with college preparatory students receiving the most complete knowledge.

Recommendation 4.7: The state should disseminate knowledge of the Certificate of Merit uniformly and provide adequate follow-up.

Recommendation 4.8: The state should ensure implementation of Certificate of Merit courses in all departments in all schools.

Conclusions

This chapter has addressed the crucial question of who has access to scarce educational resources under a policy intended to encourage more students to partake of more rigorous resources. We paraphrase this question as "Who's Winning?", seeking to capture a sociological concern with stratification systems that sort students into winners and losers. This chapter has looked at who seems to have continued access to resources (suggesting that there are many who are denied that access), through the tracking system.

Our conclusions are three-fold. First, tracks are both less easily defined and more permeable than previous research suggests. We like to call this "fuzziness." Nevertheless, there are clearly identifiable clusters of course-taking, with college preparatory and college preparatory mixed students retaining all the rights and privileges to which they have become accustomed.

Second, formal and informal local mechanisms constrain access to scarce resources, whether more classes or more rigorous classes. Teachers, especially, are viewed as powerful shapers of students' pathways; peers are also quite potent in encouraging or dampening higher aspirations. Our third conclusion is that the Certificate of Merit might well serve as an incentive if knowledge were wide-spread and access universally encouraged.

Taken as a whole, this discussion suggests that sorting students and sustaining status systems are not lessened by the reform of graduation requirements.

CHAPTER 5:
WHO'S LOSING?
STUDENTS AND TEACHERS AT RISK

Who loses or is placed at risk by the new high school graduation policy? Driven by societal concerns about persistent patterns of inequity in high schools, we now turn our attention to exploration of how and to what extent various groups of students and teachers have become more vulnerable to inequities because of reform in graduation requirements.

First, we explore patterns of student participation in various educational resources. We reasoned that overall participation in coursework, as well as enrollment in academic subjects and advanced subjects, gave students access to future educational benefits, i.e., college admission. We assessed those participation rates by gender, race, and academic performance to see if they were significant differences. We also looked at failure rates to see if patterns of gender, race, or achievement appeared. We found that clear racial differences exist in students' access to important educational resources.

Next, we examine how teachers view students who have historically been excluded from educational benefits and are considered at risk. While many teachers that we interviewed seemed quite sanguine about differences especially by race, there were indeed significant pockets of loud concern.

We then turn to teachers at-risk, focusing on departmental effects of the new graduation requirements. While teachers did not have to fear losing their jobs, they did feel squeezed by reduced flexibility. One important theme embedded in much of this discussion is the daily schedule. We have found that the two schools with six-period days had substantially fewer "degrees of freedom" than those with seven periods. This at-times invisible structure profoundly shaped teachers' perspectives.

Taken together, these analyses of students' experiences and teachers' views on both students at-risk and their own work suggest two conclusions: (1) patterns of exclusion and oppression by race continue to plague high schools; and (2) accommodation to policy changes proceeds slowly because perceptions often lag behind a more "objective" set of circumstances.

Students at Risk: Transcript Profiles

In this section we explore the possibility that certain groups of students may be affected differentially by the new requirements. In particular we analyze three criteria for sorting students' opportunities to learn. Our purpose is to see if students experience differential effects. The three categories are gender, race, and academic performance. Our intent was to test a fourth category, social class, but very early in the data collection we discovered the difficulty of collecting reliable and valid indicators of student social class. School records listed parents' occupations, but the information was so outdated and incomplete that it was not meaningful. Second, we polled counselors about individual student's social class and found that, with case loads of 250 to 300 students, counselors knew very little about individual students. The only other option was to survey students themselves, but the logistics of doing this made it impractical. Thus, the analyses presented there focus on gender, race, and academic performance to discover if there are differential patterns of access to and participation in educational resources.

The data presentation follows the pattern in Chapters 3 and 4. Of primary interest are some of the same questions outlined earlier:

- Are students earning more credits?
- Are students taking more challenging courses?
- Are students struggling more with their course work?
- Are students altering course-taking patterns in specific subject areas?

One significant result of these analyses is that minority students continued to have less access to and participation in various educational resources. Evidence of this is in the fact that they earned fewer overall credits, enrolled in fewer advanced course, and took fewer academic subjects when compared to white students. With some few positive exceptions, this pattern is consistent across schools and years. The same pattern appeared for achievement levels. That is, students with higher overall grades tended to take more courses, overall, more academic courses, and more advanced courses than students who received lower grades. Gender patterns were clear. Girls took fewer math classes (although this gap seems to be diminishing), failed fewer classes, and took more foreign language courses.

Since we have already documented that important differences exist across the five schools and between the class of 1986 and the class of 1989, all the results are presented with those breakdowns, in addition to breakdowns by gender, race, and academic performance. Each of the questions will be addressed in order with a separate discussion of trends by gender, race, and academic performance. Rather than burden the reader with extra tables, we present only those where important differences are noted. When no differences exist, the tables are in Appendix F.

1. Are Students Earning More Credits?

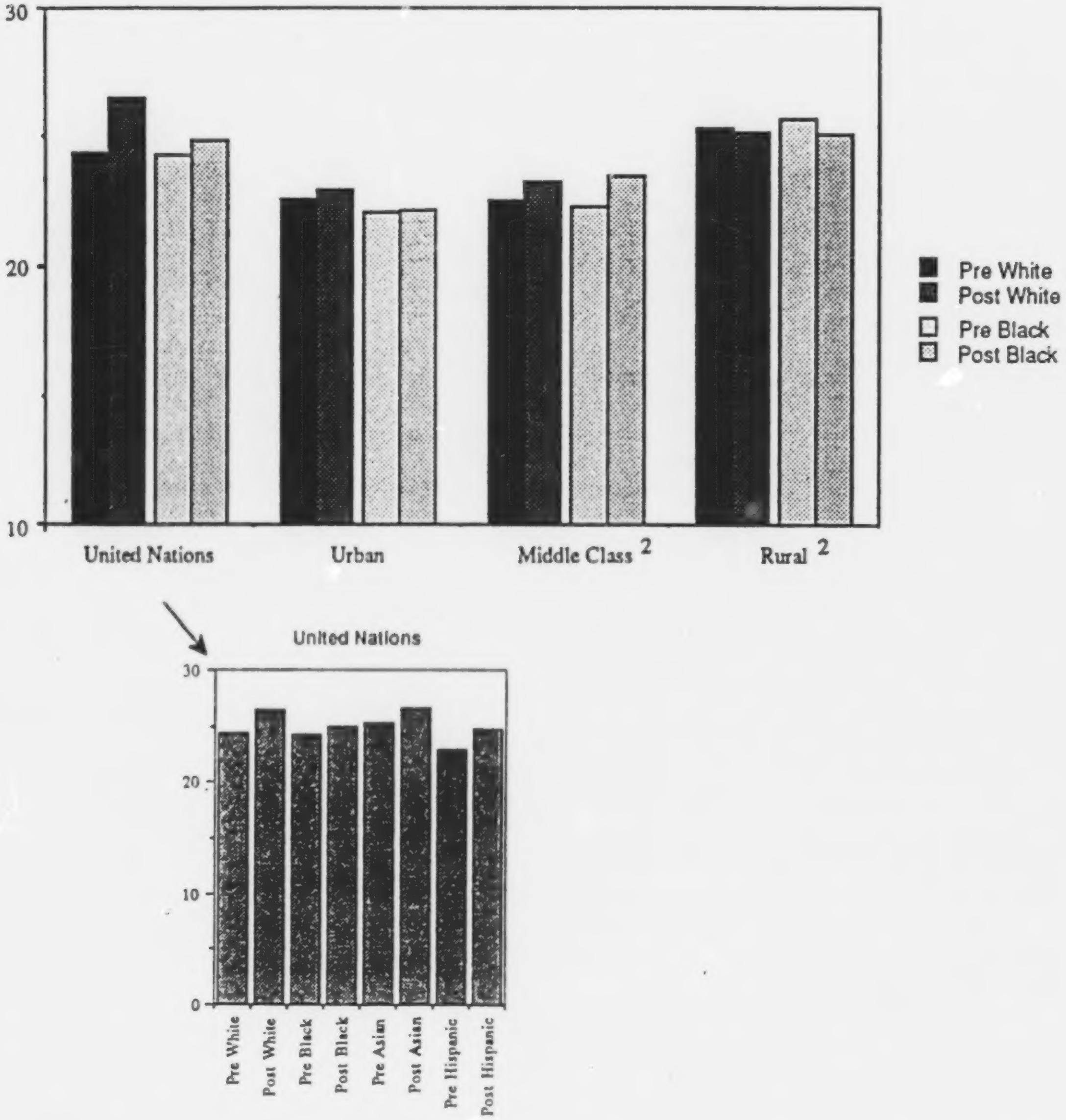
Gender. The number of credits earned did not differ by gender. That is, boys and girls earned an equal number of credits (see Appendix F.1).

Race. Table 5.1 presents the average number of credits earned by race, broken down by school and by year. The only comparisons presented are between white and African-American students since that is the primary racial distinction in the high schools studied. The one exception is United Nations, which enrolls a significant proportion of Asians and Hispanics, as well as African-Americans and whites. A separate bar graph depicts the differences across the four groups at United Nations. One school (Fast Track) did not have enough non-white students to include in the comparisons and two other schools (Middle Class and Rural) had such a small number of black students that comparisons must be made cautiously. This imbalance, while a problem from a data presentation and analysis perspective, is a fact of life in American high schools. Our sampling strategy was to purposefully oversample some racial groups to ensure enough balance for comparisons to be made.

The biggest difference in credits earned was at the most racially diverse high school in the sample, United Nations. White and Asian students earned roughly the same number of credits as did the African-American and Hispanics. In 1989, white and Asian populations earned one and a half to two more credits on average than African-American or Hispanic students. Also, the only group to not show substantial increases in earned credits after the requirements were implemented were African-American students; their average increase in total number of credits earned (from 1986 to 1989) was 0.6 compared to 2.1 for whites. On the other hand, Hispanic students held their own by showing growth in the number of credits earned comparable to whites and Asians. The other three schools with racially diverse student bodies displayed few differences.

Table 5.1:

Total Credits Earned by School[1] and Race



Statistical Effect by Race: F=11.7, $p < .001$

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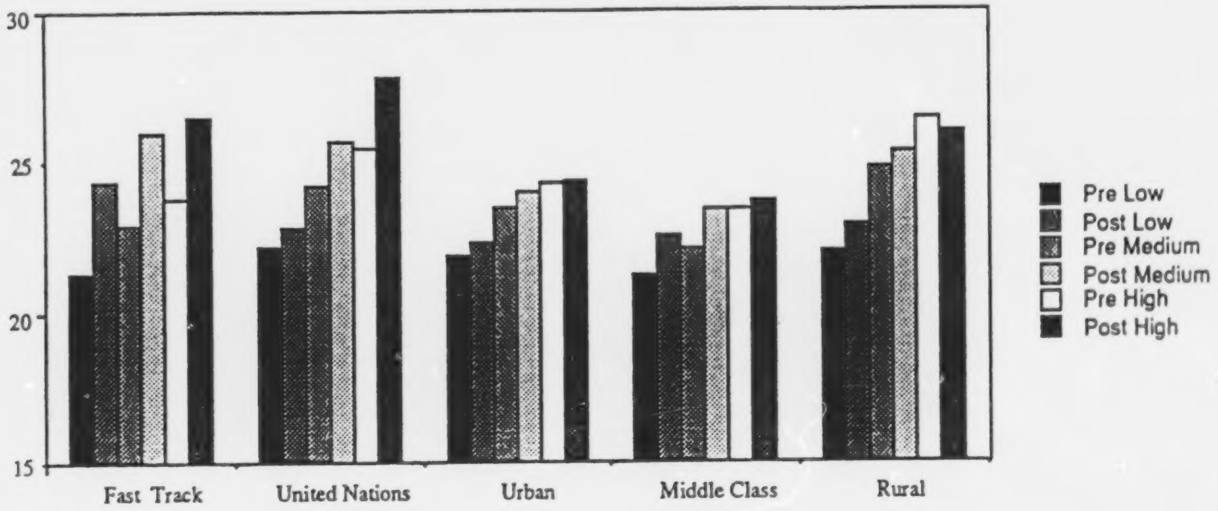
[1] One school, Fast Track, was eliminated from presentations broken down by race because there were not enough non-white students to make comparisons.

[2] The number of black students in this school is small (between 5 and 10) so comparisons must be made cautiously.

Academic performance. Table 5.2 presents the average number of credits earned by school, by year, and by academic performance. Using the grades recorded on student transcripts, we computed a composite grade point average and then trichotomized the sample into three roughly equal sized groups (high, medium and low performing students). The differences are consistent and dramatic.

Table 5.2:

Total Credits Earned by School & Academic Performance (GPA)



Statistical Effect by GPA: F=319.2, p ≤ .001

Across all five schools, students with better academic records earned more credits than those with poorer records. Students at Middle Class High School showed the least discrepancy between high and low performers with a difference of only 1.2 credits in 1989, while students at United Nations showed the greatest, with a five-credit difference. In four of the five schools the difference in credits earned between low and high achievers diminished between 1986 and 1989, suggesting increased equity after the implementation of the new requirements. At United Nations the difference widened between 1986 (3.3) and 1989 (5.0). This latter occurrence is largely a function of many high achievers being in the magnet program, and magnet program students were enrolled in eight credits per semester rather than the usual seven. The magnet program was not available to the class of 1986.

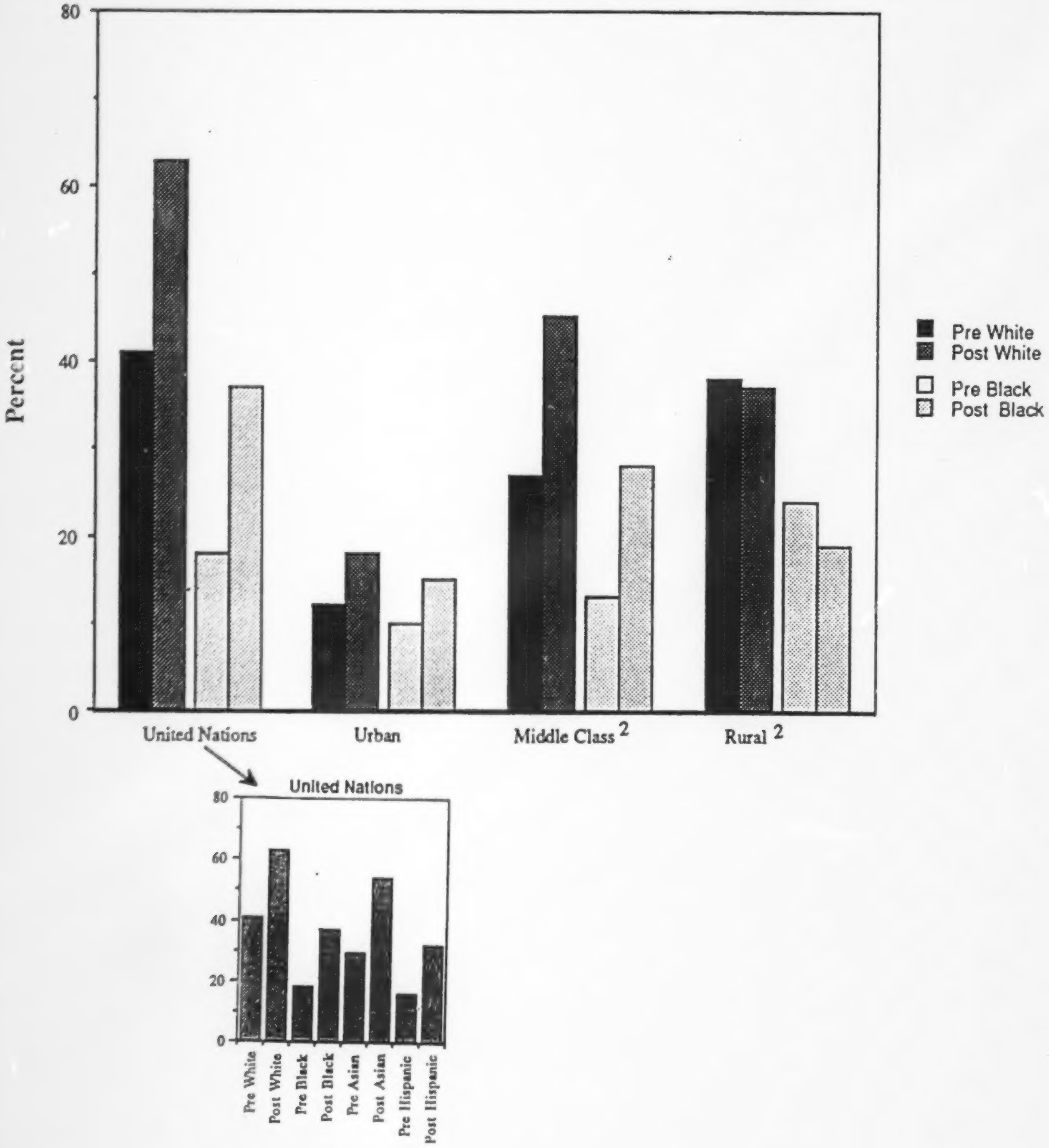
2. Are Different Students Taking More Academically Challenging Courses?

Gender. There are no significant differences by gender when comparing the proportion of advanced courses students took in the five high schools. In other words, boys and girls had equally rigorous schedules (see Appendix F.2).

Race. Significant differences existed among racial groups when enrollment in advanced-level courses is considered. Table 5.3 presents these findings. White students consistently enrolled in higher proportions of advanced courses, between one-and-a-half and two times as many advanced courses as African-Americans. In the one school with more than two racial groups (United Nations), white and Asian students enrolled in substantially more advanced courses than both African-American and Hispanic students. These findings are consistent both before and after the requirements took effect. In other words, the change in requirements seems to have neither exacerbated nor alleviated racial differences in student enrollments in advanced courses.

Table 5.3:

Proportion of Advanced Courses by School[1] & Race



Statistical Effect by Race: F=35.63, p <.001

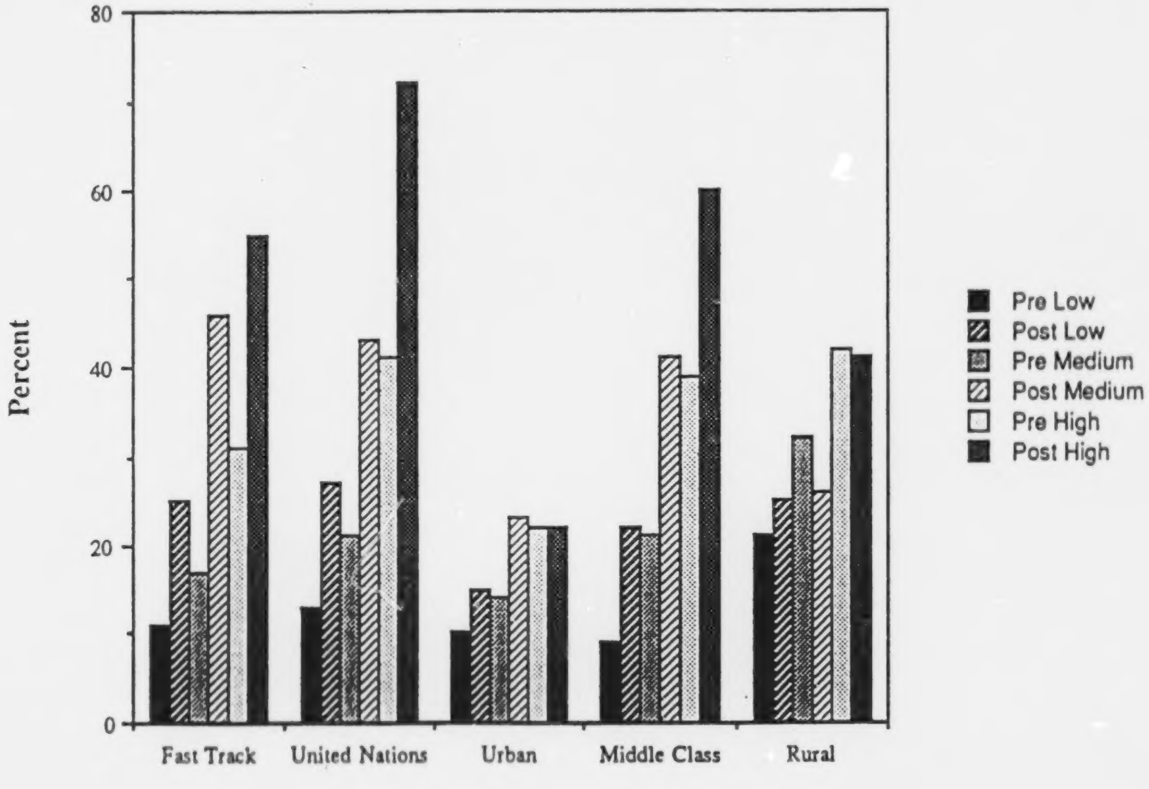
[1] One school, Fast Track, was eliminated from presentations broken down by race because there were not enough non-white students to make comparisons.

[2] The number of black students in this school is small (between 5 and 10) so comparisons must be made cautiously.

Academic performance. Differences by academic performance were very powerful and consistent (see Table 5.4). Students who did well in class (i.e. had higher GPAs) were much more likely to take advanced courses than those who didn't do as well. In the most dramatic case, high achievers in the class of 1986 at Middle Class, were nearly three times as likely to enroll in advanced courses than were low achievers. There was no consistent pattern to whether these relationships strengthened or weakened after the policy took effect. In one school (Fast Track), the difference between low and high achievers stayed the same (.30); in two schools the difference dropped slightly; and in two other schools differences became accentuated after graduation requirements increased. In one case, United Nations, much of that accentuation is attributable to the magnet program, which required students to take predominantly advanced courses. Again, that option was not available in 1986.

Table 5.4:

Proportion of Advanced Courses by School & Academic Performance



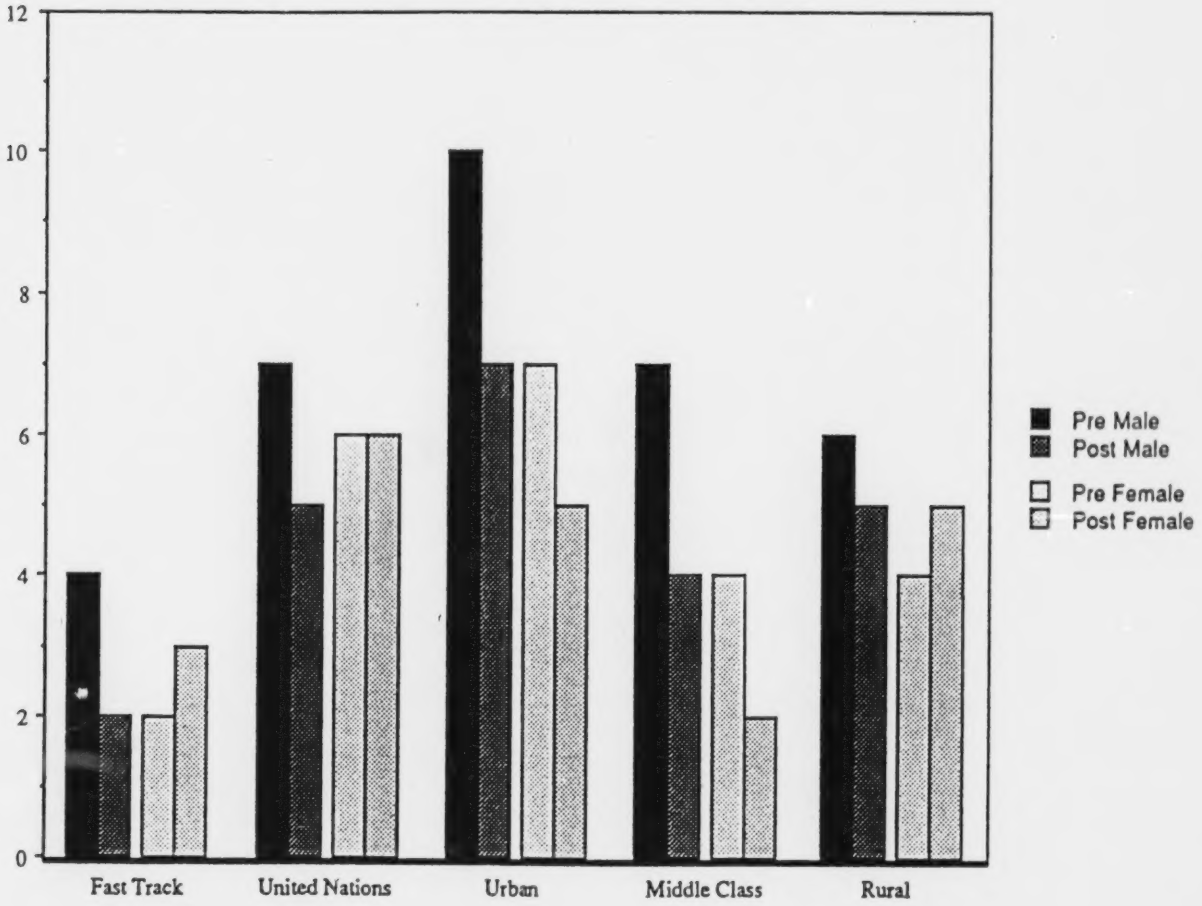
Statistical Effect by GPA: F=291.1, p ≤ .001

3. Are Students Struggling More with their Coursework?

Gender. Gender played a significant difference in the 1989 failure rates (see Table 5.5). With the exception of the classes at Fast Track and United Nations where, on average, girls failed more courses than boys by one percentage point (2 vs 3 and 5 vs 6), the findings support the conclusion that girls had less trouble passing courses than did boys. While no large gains were made after the policy reform, the gap between genders did narrow: males are more closely approximating female failure rates.

Table 5.5:

Percent of Courses Failed by School & Gender



Statistical Effect by Gender: F=9.1, p ≤ .01

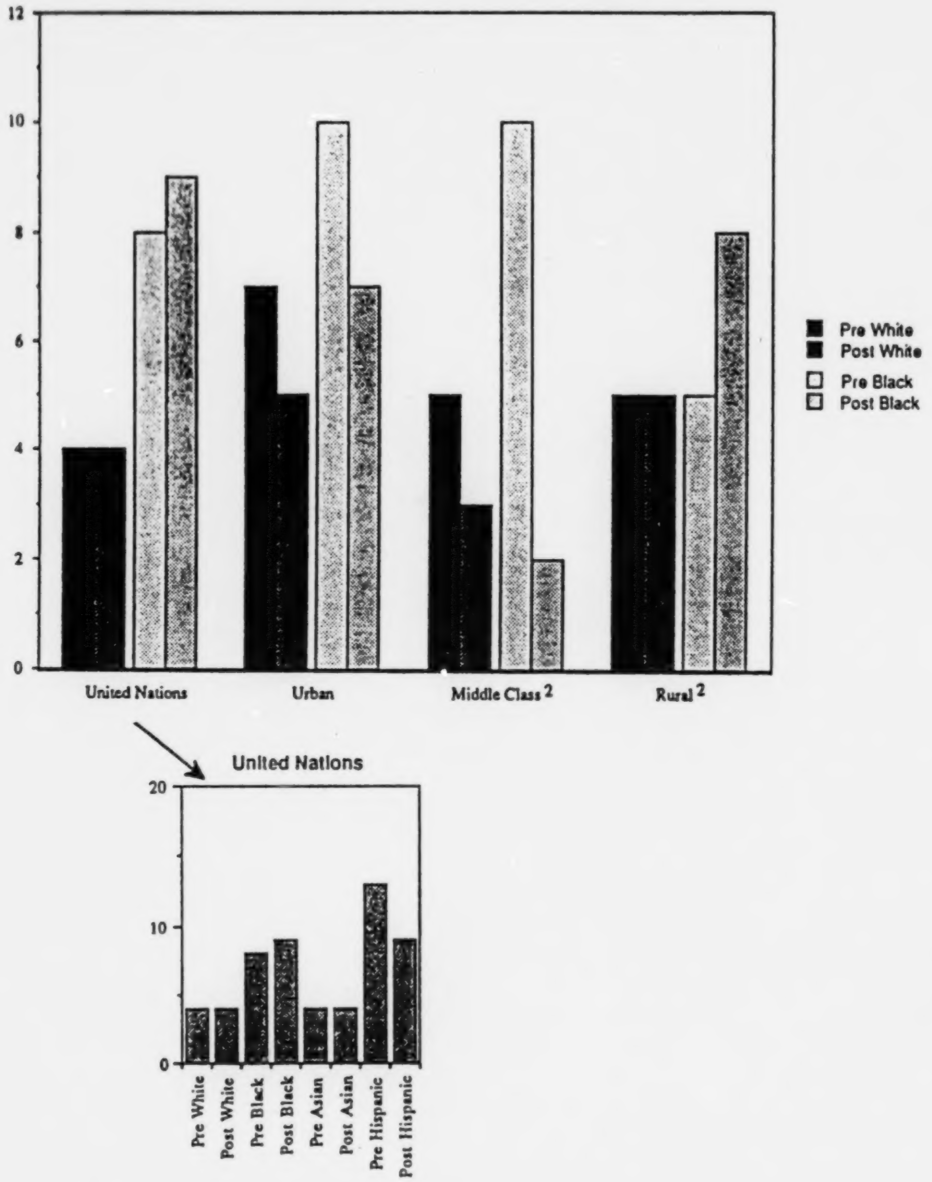
Race. Fairly strong effects were associated with race, as evidenced by the data in Table 5.6. In general, African-American students failed more courses than white students. In two schools, United Nations and Middle Class, for the class of 1986, African-Americans were twice as likely to fail classes as whites. While this pattern continued at United Nations, it completely disappeared at Middle Class. Furthermore, at United Nations, African-Americans and Hispanics continued to fail more courses than their white and Asian peers.

Overall, the data suggest that these differences may have diminished somewhat since the implementation of the new requirements except at Rural. That is, by 1989, minority students were failing fewer courses relative to white students than they were under the old policy.

Academic performance. No data are presented for this category because the argument is tautological. That is, low performers are defined partially by the number of courses they fail.

Table 5.6:

Percent of Courses Failed by School[1] & Race



Statistical Effect by Race: F=19.90, $p \leq .001$

[1] One school, Fast Track, was eliminated from presentations broken down by race because there were not enough non-white students to make comparisons.

[2] The number of black students in this school is small (between 5 and 10) so comparisons must be made cautiously.

4. Are Different Students Earning Different Credits by Subject Area?

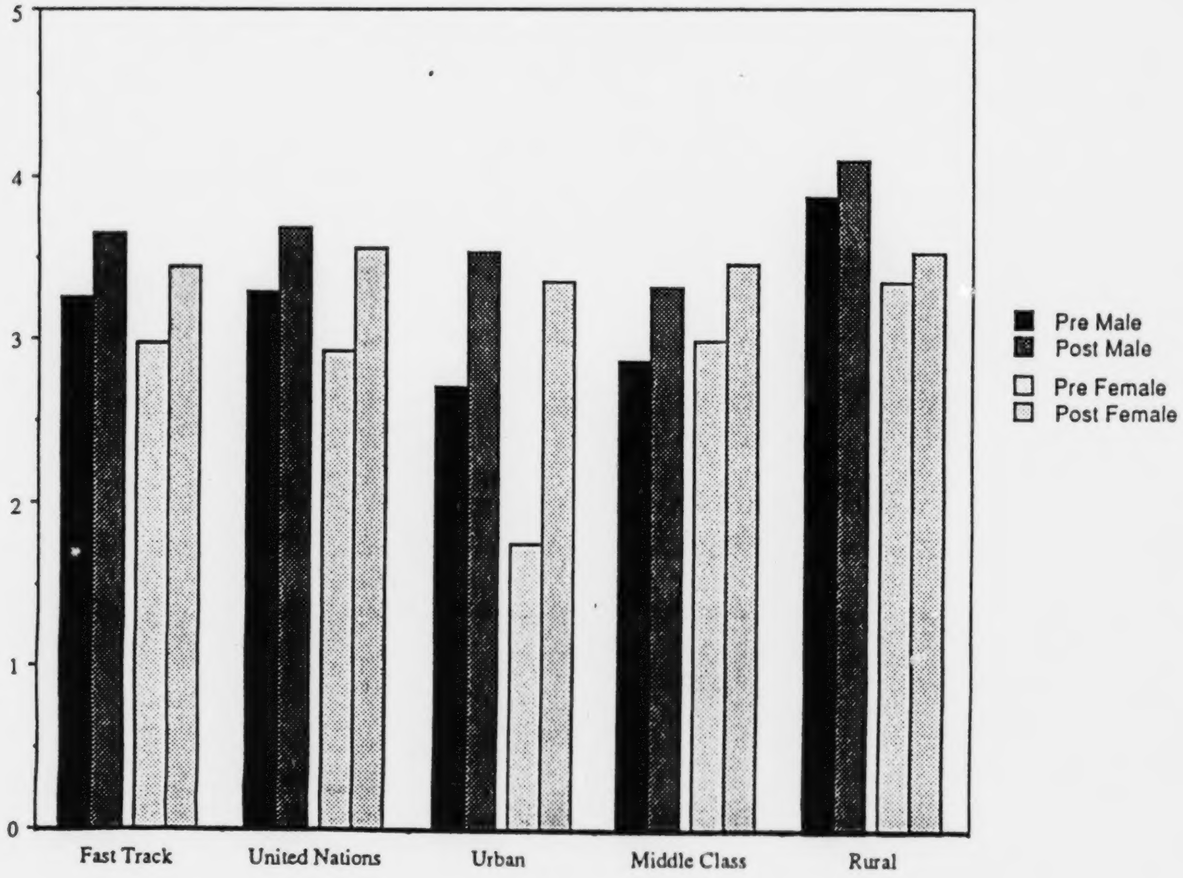
To answer this question, we review data for five different content areas affected by the requirements: mathematics, fine arts, foreign language, academic subjects, and vocational arts.

Mathematics. The following three sections present comparisons of mathematics credits earned by gender, race, and academic performance.

(1) Gender. The standard stereotype is that girls take fewer math courses than boys. In four of the five schools that was indeed the case, as Table 5.7 shows. Middle Class was the one exception. There, girls' math credits were slightly higher than boys', both in 1986 and 1989. In three of the five schools gender differences diminished significantly over time. The most notable example of this was at Urban, where in 1986 boys on average earned almost one more credit than girls. By 1989 that discrepancy had almost been eliminated. Clearly, the third math credit requirement pushed more girls to enroll in another math course.

Table 5.7:

Math Credits Earned by School & Gender

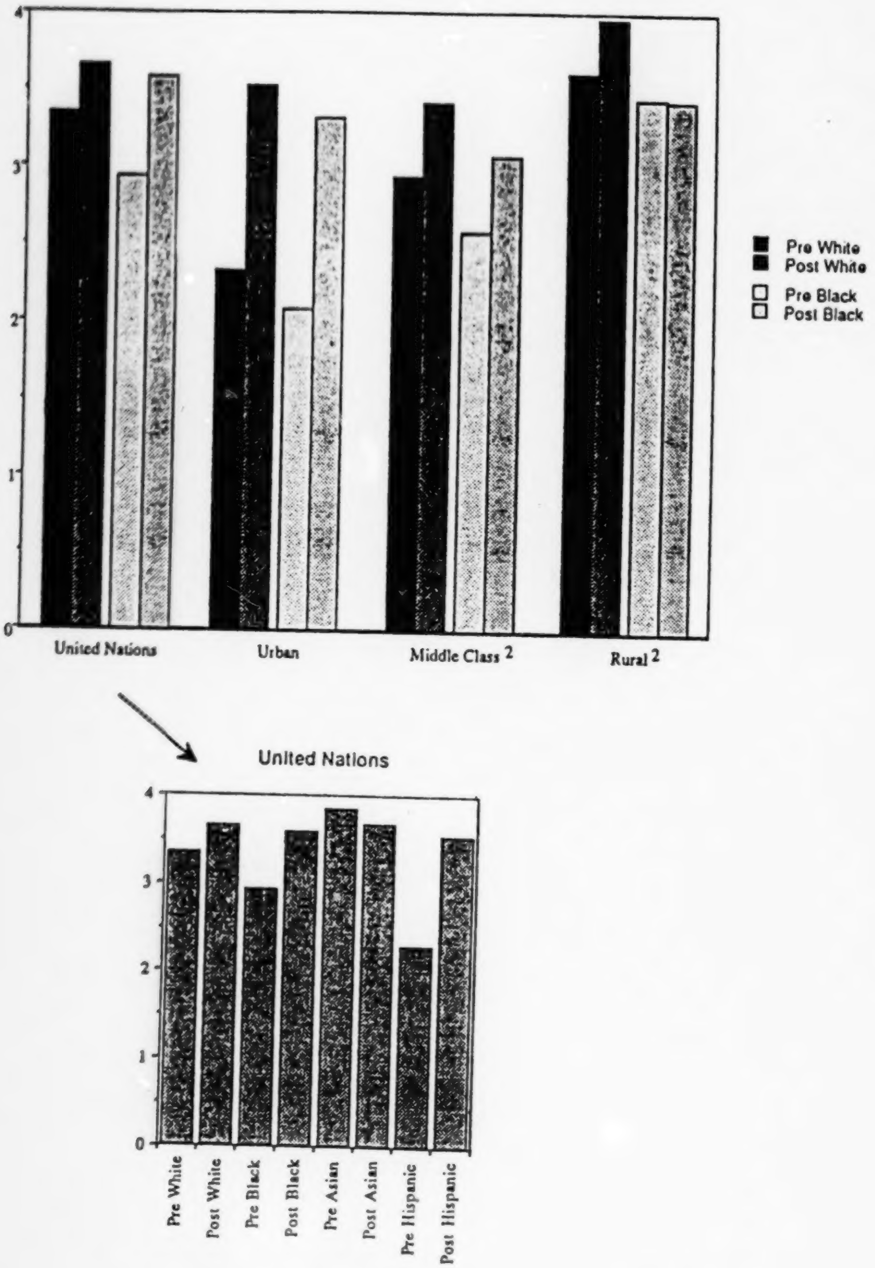


Statistical Effect by Gender: F=29.9, p ≤ .001

(2) Race. Data on the number of credits earned by race were very consistent. In general, African-Americans students earned fewer math credits than whites (Table 5.8). Significantly, at United Nations, both white and Asian students earned more math credits than either African-American or Hispanic students. One bright note in these patterns is from United Nations data. Large racial differences that existed prior to the policy change in 1986 (e.g. Hispanic students earned almost one-and-a-half fewer credits than Asian students) almost disappeared after the new requirements took effect. While not all students enrolled in advanced math courses, the fact that all students at this school earned the same number of math credits is a positive sign. At Urban, the other school with a racially diverse student population, the numbers were not quite so positive. While 1986 differences between African-Americans and white students were not as pronounced as at United Nations, little progress was made in reducing that difference over three years.

Table 5.8:

Math Credits Earned by School[1] & Race



Statistical Effect by Race: $F=6.95,\ p \leq .001$

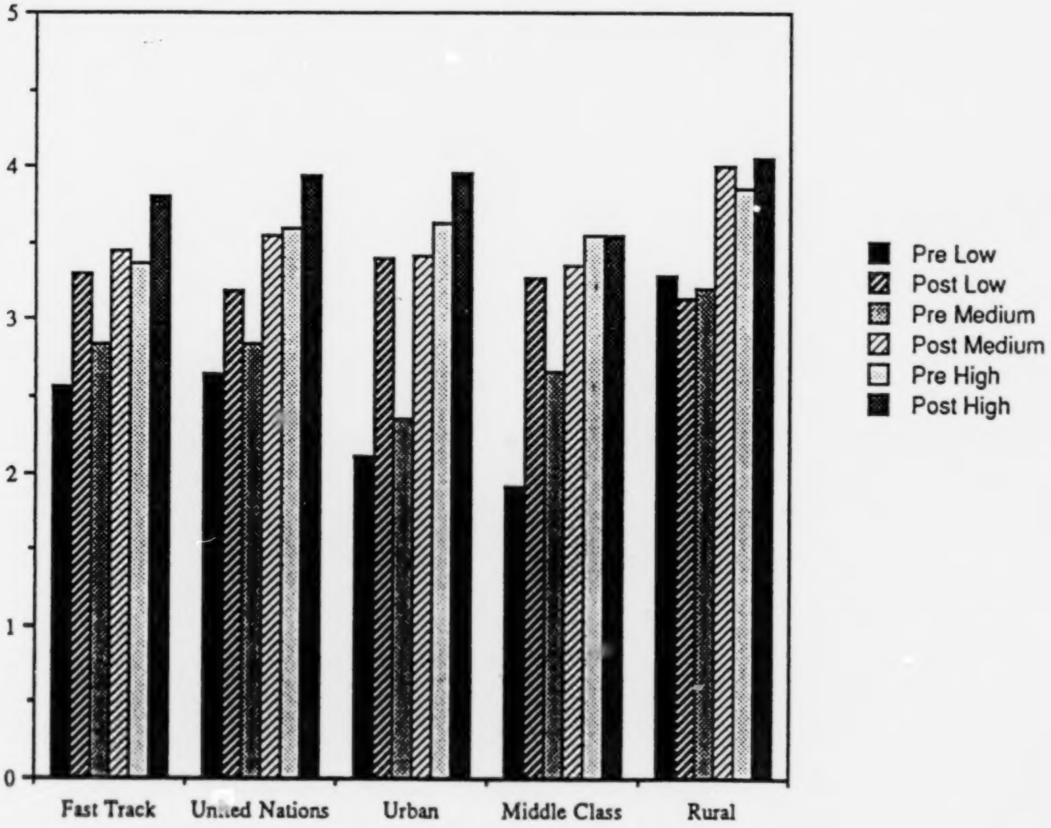
[1] One school, Fast Track, was eliminated from presentations broken down by race because there were not enough non-white students to make comparisons.

[2] The number of black students in this school is small (between 5 and 10) so comparisons must be made cautiously.

(3) Academic performance. The pattern of math credits earned was very consistent when broken down by student performance. Students who do well in course work earn more math credits than students who do poorly (Table 5.9). That was true across all five schools and both years. With the exception of Rural (where the small sample size may have had an effect) all the schools showed a lessening of the gap between low and high achievers after the policy was initiated. That is, math credits earned were more equitably distributed across academic performance categories once the change in requirements took effect.

Table 5.9:

Math Credits Earned by School & Academic Performance (GPA)



Statistical Effect by GPA: F=69.9, $p \leq .001$

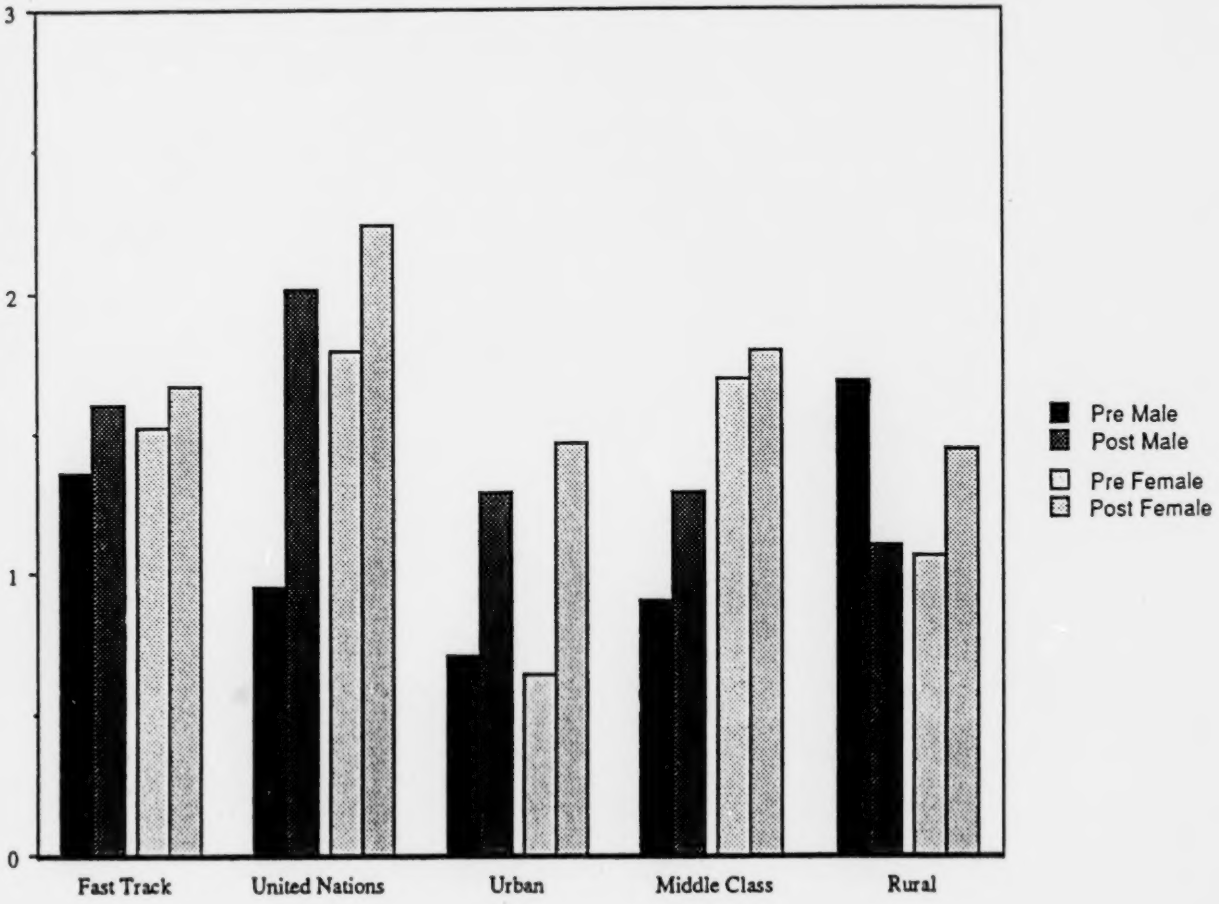
Fine Arts. There are no consistent significant differences in the number of fine arts credits that students earned when analyzed by gender, race, or academic ability. Tables F.3 through F.5 display these findings.

Foreign Language. Comparisons of foreign language credits earned by gender, race, and academic performance are presented in the following three sections.

(1) Gender. The data in Table 5.10 show that (eight of ten comparisons) in the majority of cases girls earned more foreign language credits than boys. However, the gap between them grew smaller after the requirements were instituted. With the advent of the Certificate of Merit (and the one credit of foreign language required beyond the first year) more boys began enrolling in language classes.

Table 5.10:

Foreign Language Credits Earned by School & Gender

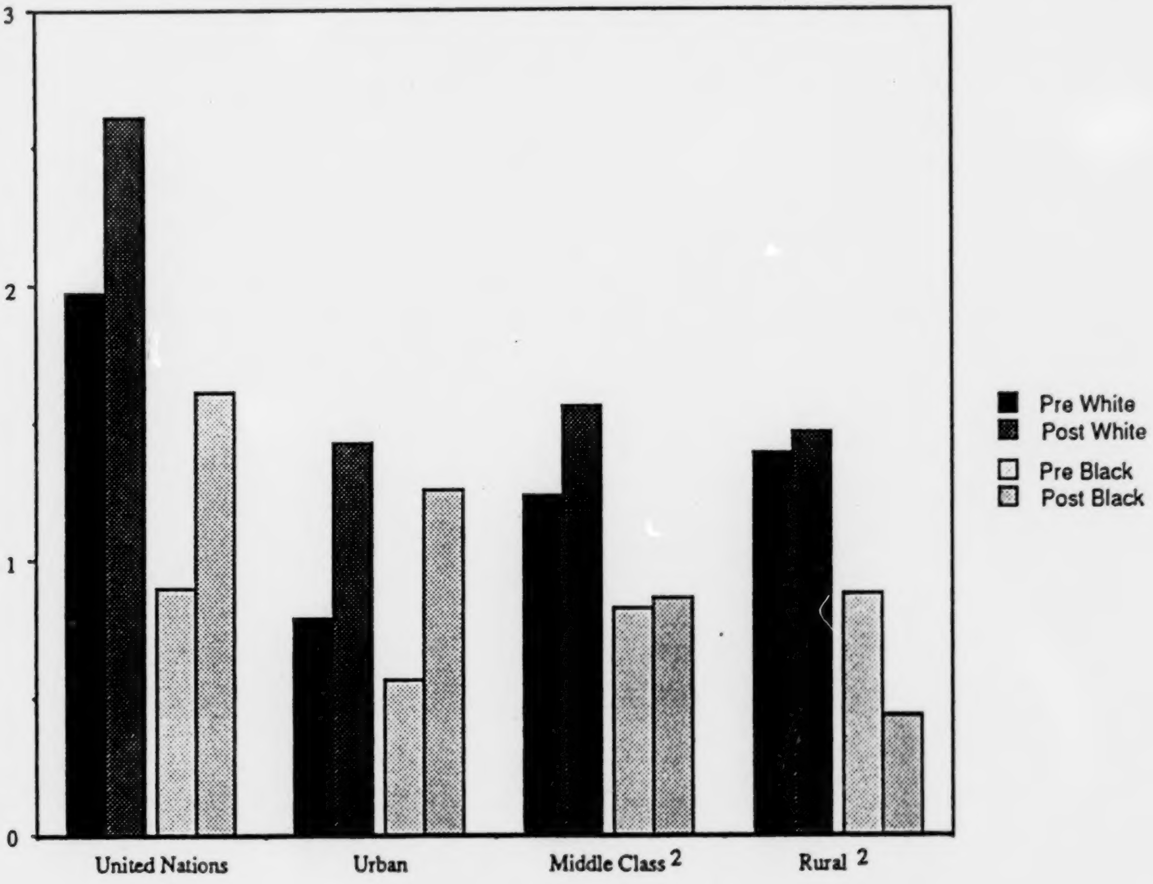


Statistical Effect by Gender: F=17.9, p ≤ .001

(2) Race. Comparing students by race produced large differences in foreign language credits (see Table 5.11). Overall, white students earned significantly more foreign language credits than African-Americans. At United Nations, Hispanic and Asian students also earned fewer foreign language credits than did their white peers. In the two racially diverse schools, the gap between the races did not diminish in any discernable way after implementation of the new policy. White students continued to earn more foreign language credits than minority students.

Table 5.11:

Foreign Language Credits Earned by School[1] & Race

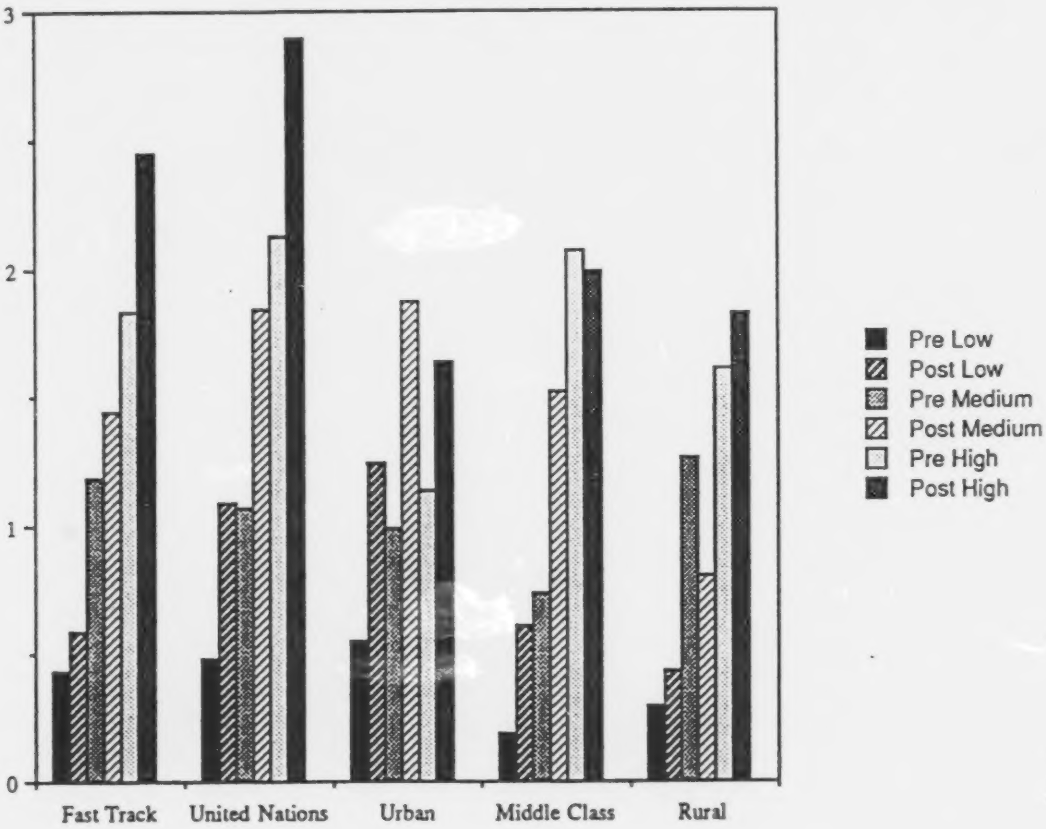


Statistical Effect by Race: F=17.96, $p \leq .001$

(3) Academic performance. Table 5.12 shows very consistent differences when comparing high, medium, and low performers in terms of the foreign language credits they earned. High achievers clearly outperformed low achievers. In the most extreme comparisons, high performers earned nearly two credits more in foreign languages than did low achievers. Much of this is due to the fact that colleges (where many of the high performers eventually end up) encourage enrollment in foreign languages. This pattern did not change appreciably from 1986 to 1989.

Table 5.12:

Foreign Language Credits Earned by School & Academic Performance (GPA)



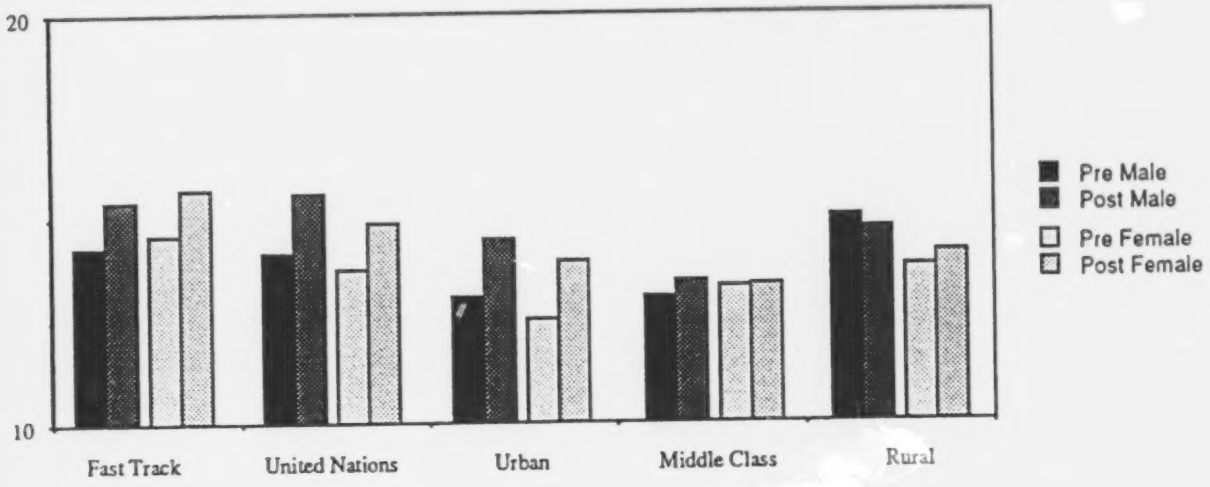
Statistical Effect by GPA: F=149.1, $p \leq .001$

Academic subjects. This measure combines the academic disciplines of English, mathematics, science, social studies, and foreign language into a single aggregate credit score.

(1) Gender. In seven of the ten comparisons in Table 5.13, boys earned more credits than girls. Fast Track was the major exception. There, girls earned more academic credits than boys both years. Nevertheless, we found no consistent pattern when comparing the differences across years. When comparing 1986 to 1989, in two schools the gap between credits that boys earned and those that girls earned stayed the same, in two the gap lessened, and in one it widened.

Table 5.13:

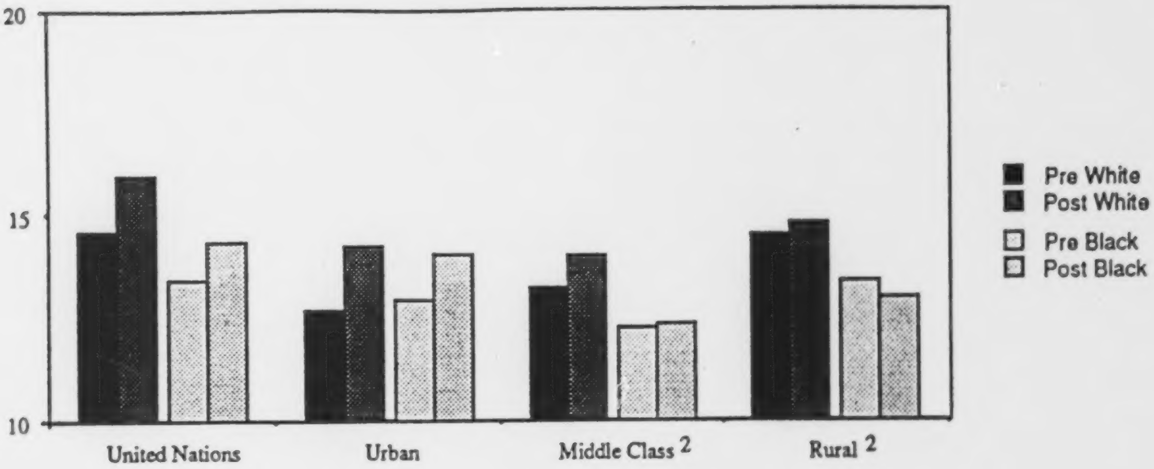
Total Academic Credits Earned by School & Gender



Statistical Effect by Gender: F=6.3, p ≤ .05

(2) Race. Overall, the same racial patterns continued. White students earned more academic credits than African-American students (see Table 5.14). In the one school with more than one racial comparison (United Nations), white students also took more acadmic courses than Hispanics, but Asians outperformed all three racial groups. Interestingly, there was not much difference by race at Urban, the other school with a racially diverse population. While the trend was not dramatic, it was nonetheless troublesome that the academic credit gap between whites and African-Americans increased after implementation of the new requirements. This suggests that white students continue to have more access to academic resources than African-American students.

Total Academic Credits Earned by School[1] & Race



Statistical Effect by Race: F=13.31, $p \leq .001$

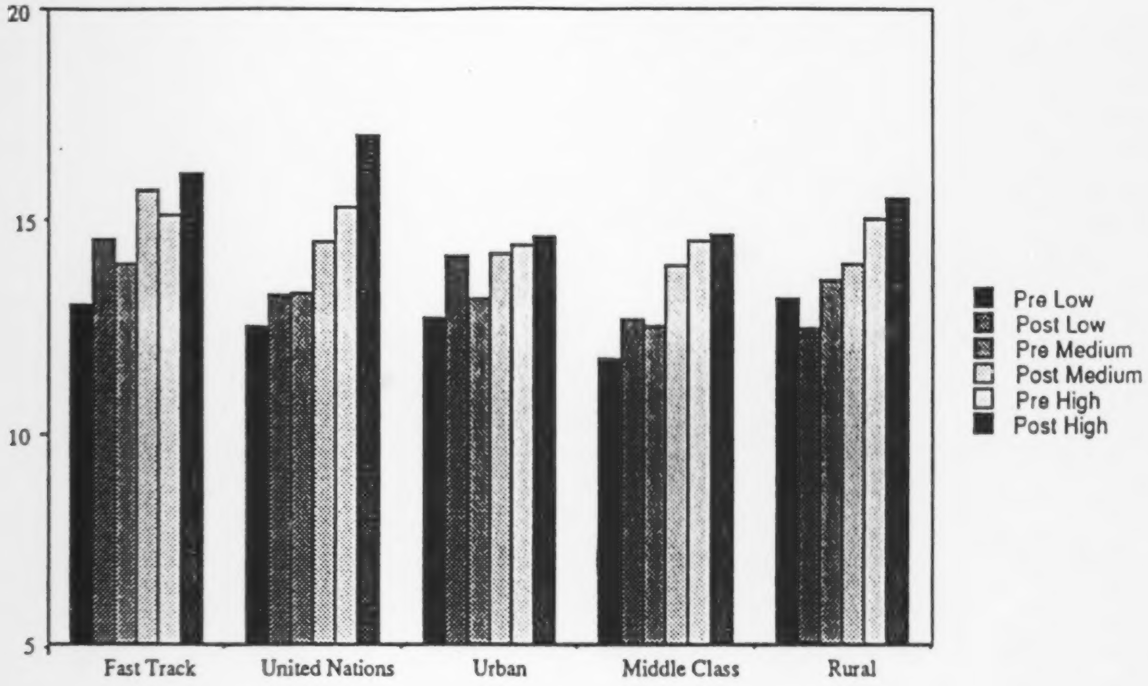
[1] One school, Fast Track, was eliminated from presentations broken down by race because there were not enough non-white students to make comparisons.

[2] The number of black students in this school is small (between 5 and 10) so comparisons must be made cautiously.

(3) Academic performance. High and low performers showed large differences in the total number of academic credits they earned as displayed in Table 5.15. This finding is consistent across all five schools. At the greatest extreme (United Nations in 1989), high performers averaged almost four more academic credits than did low performers. The smallest discrepancy was at Urban in 1989, where the difference was only half a credit. The difference between the low and high achievers did not consistently go up or down with the change in the policy. That is, in some schools the difference diminished over time, but in other schools the difference actually grew. At United Nations, the widening gap is attributable to the fact that many of the school's high achievers were in the magnet program, in which they earned eight credits each year instead of the usual seven. That program was unavailable to the class of 1986.

Table 5.15:

Total Academic Credits Earned by School & Academic Performance (GPA)



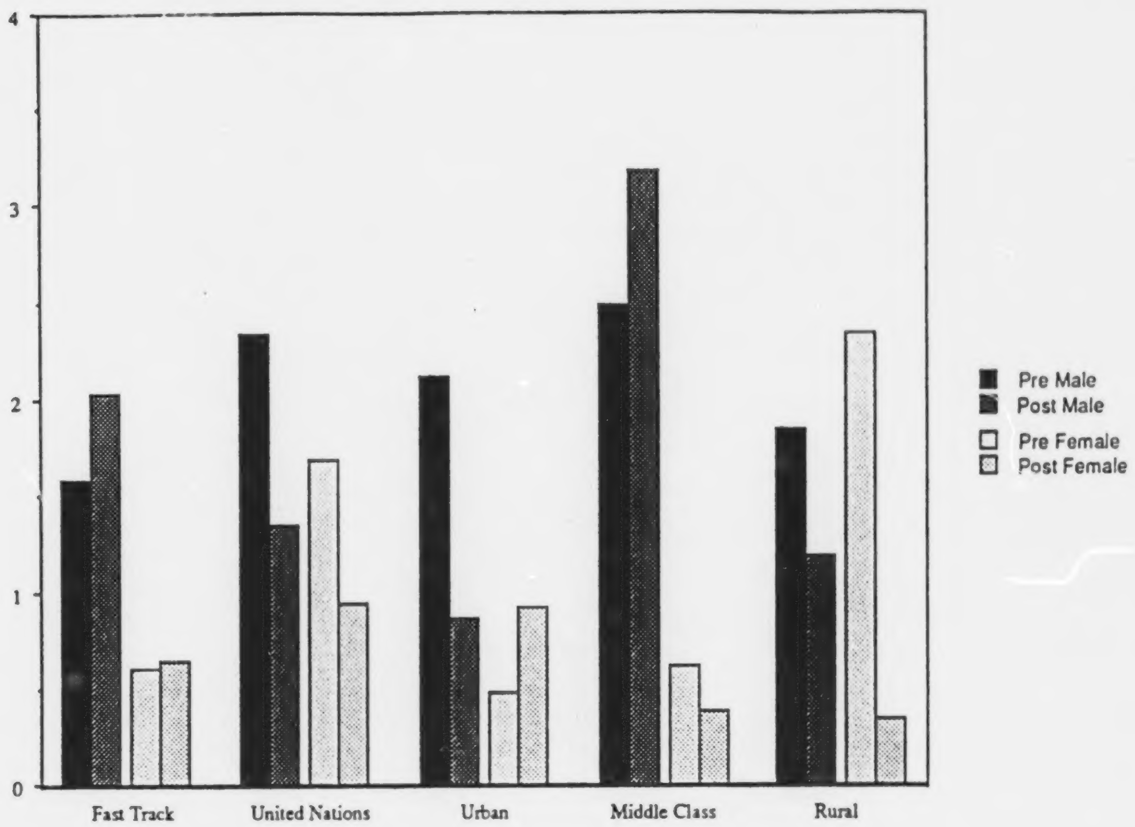
Statistical Effect by GPA: F=175.8, $p \leq .001$

Vocational subjects. Gender, race, and academic performance comparisons for enrollments in vocational courses (a subset of practical arts) conclude the transcript analyses for students at risk.

(1) Gender. Large gender differences appeared when comparing credits girls and boys earned in vocational courses (see Table 5.16). In nine of the ten cases boys earned more credits than girls. The one exception was Rural in 1986. At that time the school had a beautician program that in 1989 was no longer available. There was no consistent pattern of change between 1986 and 1989. In several schools gender differences increased after the new requirements took effect and in other schools they decreased. Most interestingly, at Urban where boys earned one and a half more vocational credits in 1986 than girls, by 1989 girls closed the gap. We assume that this was due largely to the reduction in the number of vocational courses offered in the school.

Table 5.16:

Vocational Credits Earned by School & Gender

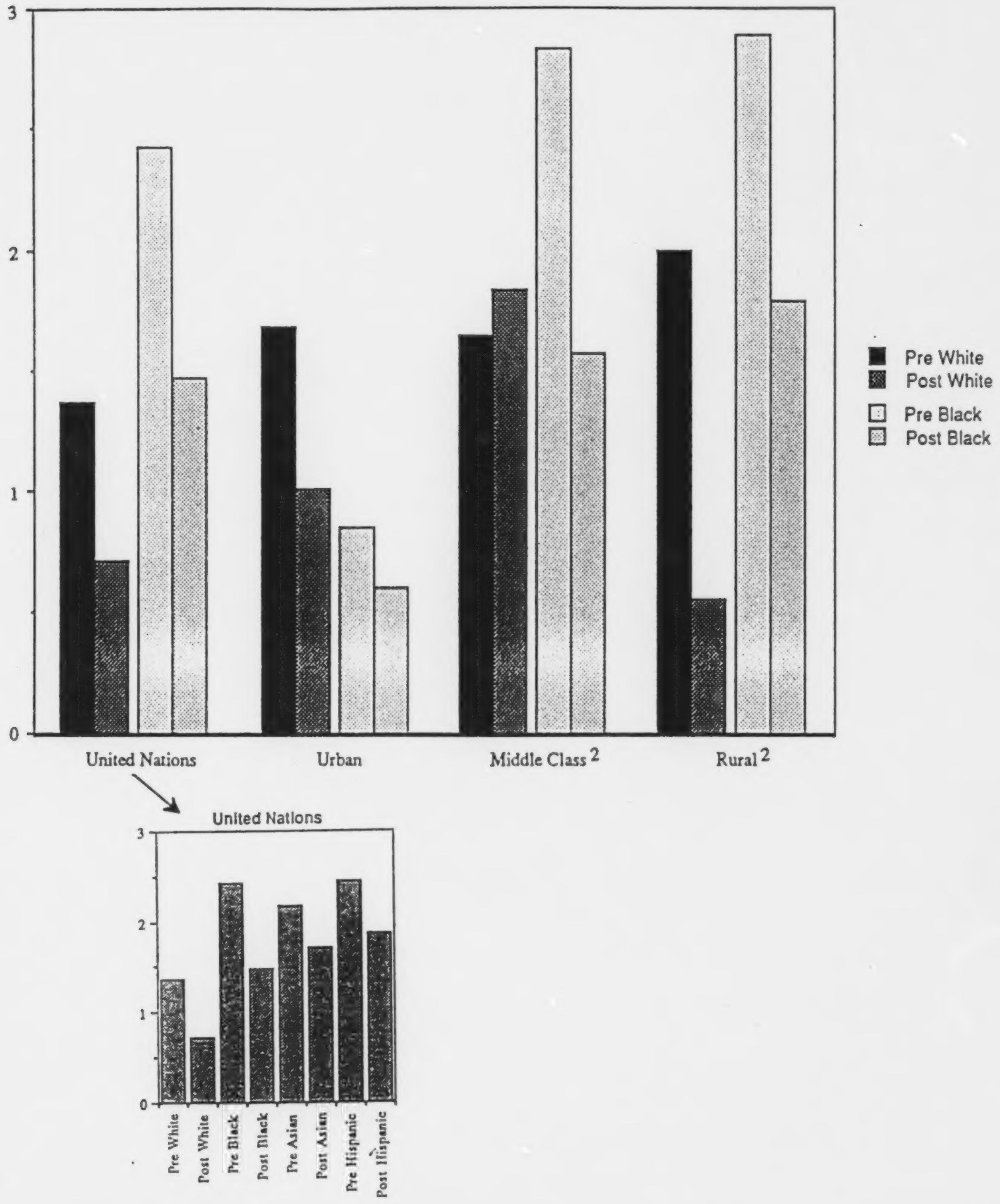


Statistical Effect by Gender: F=77.65, p ≤ .001

(2) Race. The general trend, as seen in Table 5.17, was for white students to take fewer vocational course than African-American, Hispanic, or Asian students. The one notable exception was at Urban where African-Americans took fewer vocational courses than whites. However, these students also took fewer academic subjects, creating a larger demand for "general" courses almost by default. That is, African-American students at Urban seemed squeezed into the general track by inaccessible academic programs on the one hand, and diminished vocational offerings on the other. Consequently, they ended up with a grab-bag of general courses that appear to serve no one well. Notably, these diferences by race declined after the new requirements were in place.

Table 5.17:

Vocational Credits Earned by School[1] & Race



Statistical Effect by Race: F=2.47, $p \leq .05$

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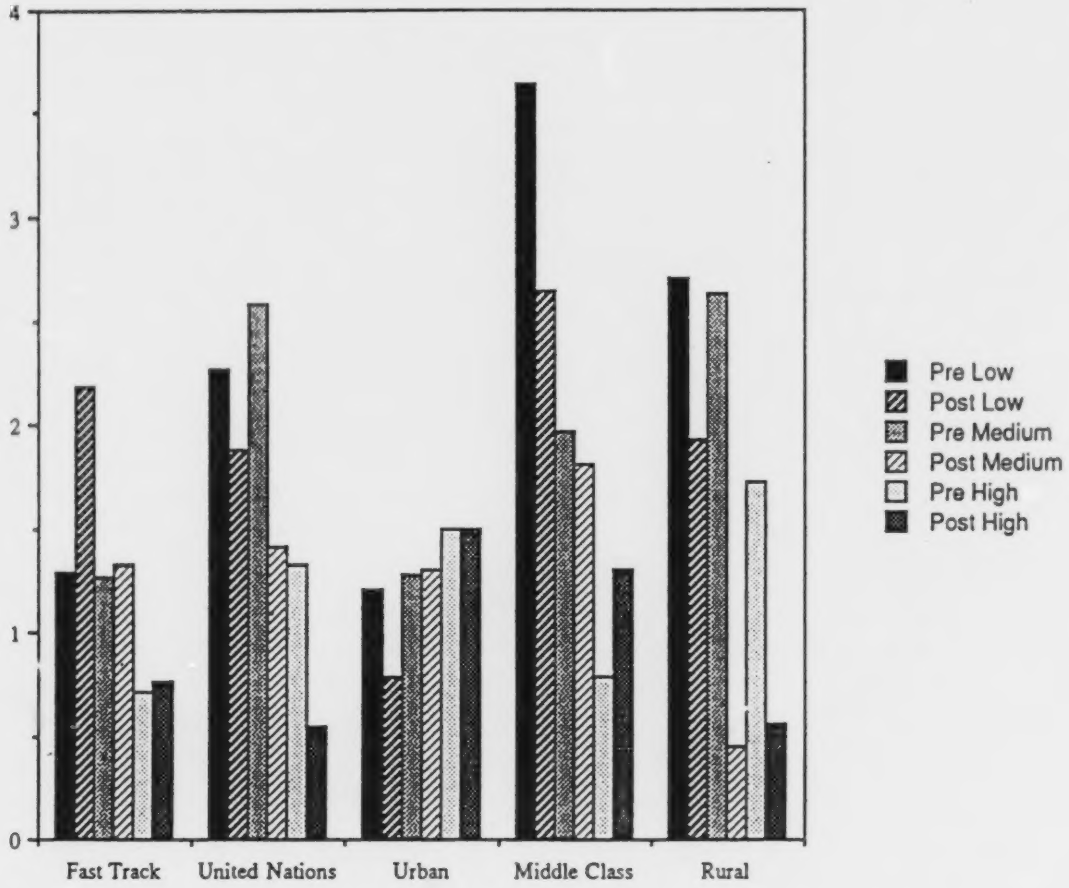
[1] One school, Fast Track, was eliminated from presentations broken down by race because there were not enough non-white students to make comparisons.

[2] The number of black students in this school is small (between 5 and 10) so comparisons must be made cautiously.

(3) Academic performance. Significant differences existed between the vocational credits that low and high achievers earned, as documented in Table 5.18. This finding holds up consistently across all ten comparisons. Most of the differences were in the range of one to one and a half credits, the biggest difference was at Middle Class, where in 1986 low performers on average enrolled in nearly three more vocational courses than did high achievers. By 1989 the gap between high and low achievers was reduced at Middle Class but in the other four schools it grew.

Table 5.18:

Vocational Credits Earned by School & Academic Performance (GPA)



Statistical Effect by GPA: F=28.2, p ≤ .001

These analyses of student transcript data present some gloomy findings and only a handful of bright ones. Minority students continue to have limited access to and participation in academic resources. They also receive failing grades more often than their white peers. Girls continue to take less math than boys but fail fewer courses. Low-performing students' experiences reveal cycles of disaffection that may well be confounded by race. Low performance is associated with more failing grades, few overall courses, and fewer advanced courses. As students begin to sense that they are failures or on the margins, they participate less intensely in school. Less intense participation may well foster poorer performance, and so the cycle continues.

Fortunately, some gaps between races, genders, and achievers seem to be lessening. While African-American students continue to receive more failing grades than whites, the gap appears to be diminishing. And while minority students continue to take fewer math courses than white students, that gap too is decreasing. Another bright spot is that while boys proportionately fail more courses than girls, the gender differences are lessening.

Conclusion: The complex interaction of race, gender, and academic performance creates conditions whereby certain students are often at-risk of not participating fully in the educational resources of the school.

Recommendation 5.1: Schools need to restructure to encourage fuller participation by all students in each school's resources. Examples include de-tracking, heterogeneous grouping, cooperative learning, and Copernican-like plans.

Recommendation 5.2: The state and local systems should formulate policy directed specifically at minority and at-risk youth in order to alter the structures in schools that promote continued low participation by those students.

These analyses have focused on race as well as gender and academic performance -- domains which encompass student populations often at-risk of not having full access to educational resources -- minority students, girls, and low achievers. Other populations often at-risk are language-minority students, students with special needs, and students oriented towards vocational programs. All of these populations may well drop out of high school prior to graduation because of the confluence of failure, disaffection, systematic exclusion from valued resources, and the like. Our data gathering efforts looked at these students specifically, by asking teachers if the new policy placed these students at even greater risk by reducing their opportunities to participate in important educational resources. We turn next to a discussion of teachers' views on students at-risk, and especially the effects that the policy change had on them.

Students At Risk: Teachers' Views

To complement the transcript data, which showed minority students and low-performing students consistently excluded from academic resources, we interviewed teachers. Specifically, we wanted to know how teachers felt about the stricter course requirements and whether they thought the requirements would affect the dropout rate, and whether they thought some at-risk groups would have a tougher time than others under the new requirements. We asked teachers about dropouts, ethnic, and racial minority students, foreign-born students, students with special needs and those in vocationally oriented programs. First, we discuss how teachers feel about students leaving high school early. Because Urban has had such high dropout rates (estimated by some at near 50 percent), we highlight Urban teachers' perceptions.

1. Dropping Out

There were clear patterns in teachers' views about students dropping out over the four years of data gathering. In 1986, as discussed above (see Chapter 3, Early Responses to Reform), many teachers we spoke with indicated that students would be "pushed out" of school because of the new, stricter requirements. In fact, opinion was about evenly split, with half the teachers expressing strong concern about students dropping out. The other half said that the new requirements might even encourage students to do more and try harder. Recall that we interviewed teachers early in the implementation of the new policy when courses and procedures were not all in place or running smoothly. Furthermore, a cohort of students had not completed high school (or come near) under the new requirements; lots of questions and worries were apparent. By 1988 and 1990, opinions had shifted somewhat, the most dramatic shift occurring from 1986 to 1988.

By 1988, almost two-thirds of the teachers told us that the new requirements were not increasing the school dropout rate This had risen to nearly three-fourths by 1990. Clearly, the schools adjusted as time passed: courses were tried and modified, fine arts and practical arts requirements were met, the third year math requirement was being implemented. Teachers anticipated graduating students with a somewhat new set of credit requirements, but in general, their fears about increasing numbers of drop-outs were unfounded. Typical comments were:

> I really don't see any changes in the dropout rate because of the new credits.
>
> With a seven-period day, students have more room. For example, if they failed English 11, they have space to take English 11 in twelfth grade. [They] don't have the same sense of hopelessness.

> [My] initial impression is to say yes, [but] I don't think it has that big an impact. I believe that they dropout in seventh grade. I don't think the requirements influence them.
>
> [It] just seems to me kids aren't dropping out like they used to. Kids stay -- kids come back next year even though they have failed. [I'm] not sure why that is.

In general, when talking about students dropping out, teachers said the school had little influence. One noted that "sometimes I think whether they succeed or fail -- we don't influence it. If it's harder, they come up to it; if we make it easier, they still fail." In contrast, a few teachers from Fast Track told of how the school provided special support for students at-risk, thereby decreasing their chances of dropping out: "We have programs designed to help students that have difficulty meeting the requirements." and "we have courses for them, general-type courses. [It] shouldn't be a problem here. They've always taken those courses." Across all five schools, however, teachers described other circumstances that caused students to disengage from (or never fully connect with) school, including home circumstances, student characteristics, and life choices. For example, teachers spoke of home situations: "Domestic problems cause kids to drop out"; "dropping out has more to do with SES, child abuse, and drug addiction. These have a bigger impact on dropping out." However, home was also mentioned frequently as an important source of support: "I feel they'll stay in if they have encouragement from home. They may say they're dropping out because of the requirements, but that's just an excuse."

Some teachers spoke of student characteristics that caused students to drop out. One academic subject teacher said, "dropouts are students with a lack of interest. Even if the requirements were 15, you would still have the same number of dropouts"; and another who stated that "kids dropping out turned off long before." Others noted age as a factor: "Kids who dropout are so far from meeting any of the requirements. Age plays a role: when [they are] 14 years old and have four more years left, they want to get a job and drop." Yet others talked about how teenagers live: "Dropping out has to do with the life style students have (pregnancy, drugs, alcohol) and it has nothing to do with the graduation requirements."

Teachers also gave the desire to earn money as a reason for students dropping out: "Kids drop out for money, cars." And another teacher said that kids have no real reason for staying in this school. They need the money more than the credit, they think. So they often quit to work and help support their families." Another told us how "we're in a blue collar area and their priority it to get a job. We have a small number who are interested in higher education, but most of those kinds of students go to the city-wide schools. Dropping out to work was discussed often at Rural where the local water-related industry was a viable alternative for teenagers. Teachers described how "watermen" families often "let kids work as soon as [they are] big enough. By 15, many have their own boat. We lost them before graduation." At times, students of color were seen as being most at risk: "Hispanic males are number one to drop out; next black males. [They have] the poorest attendance records."

There were teachers in all five schools who thought that the new requirements were causing more students to leave high school early, but they were in the minority. These teachers said that the increased pressures of the new requirements would put students already at-risk in greater jeopardy. Their general logic was that, for students struggling with high school anyway, the requirements and less flexibility would compound the difficulties. Teachers told us how "I would think [for students who] have become less successful with fewer [requirements], with more it would be even harder." Another teacher echoed this, saying that now there was "more potential for them dropping out. Twenty-two credits for some -- it would be an eternity for them to get it. I know some students who are in ninth grade for the third time."

Some teachers identified students whom they thought would be affected because of their lower ability. They spoke of how these students have become "overwhelmed", they "do not have study skills", and were "not part of the planning in ninth and tenth grades." Others noted how the requirements "have made life tougher for lower achievers"; and that "borderline kids are having more trouble." This teacher went on to describe how "previously we were going down. [It] should be our charge to kick enough butt to get them through." This perspective is best summarized this way:

> Graduation requirements are so restrictive that students who are at-risk (handicaps other than mental capacity), [their] frustration level is so quick. [They] make it though two years, even three years, then they hit a wall. Don't have the flexibility in the requirements for them to attain a ... diploma.

Dropping Out at Urban. Although teachers at Urban thought that the new graduation requirements wouldn't particularly affect the dropout rate, they did tell us that dropouts were a major problem at the school. Many thought the causes to be a need for money, either to assist the family or to support oneself, a community that was unsure about the value of higher education, disaffection with school, and so on. We include their accounts of what it is like to have a substantial number of transient students -- students dropping in and dropping out of their classrooms -- because their voices were so eloquent.

In describing the community and its influence on students dropping out or not, one teacher offered the following:

> [It's] a unique community: blue collar, first high school graduate in the family. [There's] a work ethic, not an academic one. [There's] a heavy immigrant population -- the widest ethnic diversity in the city. [This] all impacts dropouts.

From this person's perspective, the community ethos and population weaken the ties to high school.

Several teachers mentioned ninth grade as a critical year, one in with the highest number of students left school. Many gave explanations for this:

> [It's] always a greater number of ninth graders who drop out. The reason I say ninth graders [is that] when they get to ninth grade, it hits them that they have to pass the tests. In middle school and elementary school, they pass along and don't have to do well.
>
> [It happens] back in ninth/tenth grades. [There's] a steadily decreasing rate up to twelfth grade. Seems to me that [it's] a combination of things. [they] get two or three failing grades and give up or want money. A few don't give a damn. [I] see the influence of the home weakened, [but] the system is trying to get to these kids before they drop out.
>
> Falling out occurs in ninth/tenth grade. [It's] not tougher requirements; [it's] other factors, more community based. I don't teach ninth grade but by the time they get to the senior year, they've made a commitment to stay. We're trying something next year to use block scheduling -- hopefully [it] can identify problems early and work with them. Middle schools do a lot of social promotion.

Others described how their class size shrank from first to second semester, sometimes quite dramatically:

> The dropout rate is terrible. [I] begin with 32 ninth graders in homeroom and end with 16 in tenth. [They've] either dropped out or failed. I don't know if it's a direct result of the new requirements; I couldn't say.
>
> We're losing more ninth graders -- I could prove it with the rollbook. At one point in my ninth grade class, I had 48-49 students. [There are] 30 on the roll now. In eight period, [I] had 38-40; [I] now have 25. [I'm] still carrying the names but don't have the bodies. With seniors, I have not seen [such] a drastic drop; [they] stick with it.

Despite these grim pictures of young adolescents leaving school, several teachers mentioned how the city had a dropout prevention initiative and ways that the school was addressing the problem. Some seemed hopeful:

> Ninth grade is a real problem. [There are] smaller classes the second half of the year .... I see a large dropout rate. [We] had a faculty meeting to get a handle on ninth grade -- they drop by the wayside -- and they're too young. If we could keep closer to them, we have to give them more support. For example, I have a girl in ninth grade for the fourth time. I think the city is working on this as a whole.

2. Ethnic and Racial Minority Students or the Foreign Born

The teachers we interviewed generally felt that ethnic and racial minority students or those who were foreign-born would not be differentially affected by the requirements except as their minority status or limited English proficiency combined with other factors to put them at risk. Capturing this perspective, one teacher described how:

> [It's] very difficult to say that in our community. I think the requirements put forth by the state are not restrictive. The school sets the standards, not the state. Logically, [it] shouldn't be a problem although I'm sure it is in the inner city. [It's] a school-based problem.

Most teachers felt that there should in principle be no differential effect but that being a member of a minority group (especially in the inner city) or recently immigrated to the United States might well put a student in circumstances that would make high school completion more difficult. Additional circumstances included low economic status or disrupted family situations.

According to another perspective, the requirements had more of an effect on vocationally oriented students and that, if a minority student were interested in work/study options, there might be an impact: "the requirements are not culturally biased themselves."

A teacher's capacity to respond to questions of race and primary language, however, depended directly on the specific student population in the school where the teacher was located. Teachers from Middle Class and Rural had little or no experience with foreign-born students and thus could not really discuss the requirements' effect on them. Teachers from Middle Class also had few minority students, thus limiting their basis for discussion about students from historically oppressed groups. Teachers at Fast Track, United Nations, and Urban all had racial and language mixes in their schools, with United Nations the most diverse. Not surprisingly, then, teachers at United Nations expressed the most concern about minority and immigrant students. Teachers at Urban spoke eloquently about the enormous problems facing their students, about half of whom were black. In sharp contrast, teachers at Fast Track dealt by and large with an educationally upwardly mobile population and attracted highly motivated students and families. Their perceptions reflect this experience. We provide some detail on each school below.

At Middle Class, concerns about racial and ethnic minorities were minimal because of their low minority and almost non-existent immigrant student enrollments. Teachers noted that "our minorities are so small. I don't see any significant impacts. Blacks we do pull come from lower socio-economic groups. But whites from low SES also fail;" "I haven't gotten any negative feedback but it may be the kids I see. Most are middle-income or upper income. I have more white students from low-income families with lots of problems;" "The ones I have are great students. [I've] never had any problem at all with that."

There were no foreign-born students at Rural, although one teacher expressed concern for African-American students whom he linked to waterman students, describing both as being at greater risk: "both blacks and watermen have trouble [because there's] no family encouragement and [they're] not motivated."

Teachers at Fast Track described minority students as not being differentially affected, noting that "I have students who are college-bound already. They do very well;" "I don't know why they would if they do." Similarly, foreign-born students were most often viewed as excelling: "[they do] very well in this program -- meet the requirements and go beyond! [They are] very ambitious;" "they come in and do better than anybody else! Math is often a strong point;" "so many of our foreign-born kids are the sharpest in the school;" "the Oriental group achieves the greatest." However, programs to support foreign-born student received both positive and negative comments. Some teachers were concerned that these students' needs were not met, "their needs are not addressed. They are given instruction but left to fend for themselves" while others felt they received good support "they provide remedial help with the language."

Serving the most diverse student population in terms of race and primary language, teachers at United Nations revealed much more complex assessments of their students' responses to new, more strict requirements. Many of the teachers we spoke with described the complex interactions of socio-economic status, racial, or linguistic minority status, track placement, and "at-riskness." Thus, they told us how educational background made so much difference and that for student from impoverished backgrounds, the requirements could be difficult: "For some, yes; and for some, no. Those with a good educational background, no. Those ill-prepared are then pressured to catch up. [The requirements] may negatively influence." Another described how the school was better serving low-income minority students than before but that the "new credits are hurting [those students] because they are at-risk anyway." Curricular track placement was a primary concern: "Hispanics and blacks are hurt because more [are] in low tracks."

While foreign-born students at Fast Track were often among the intellectual elite, at United Nations language-minority students were in all tracks. This seemed to foster more broad-based concerns about those students. Many teachers worried about how well these students were faring:

> Language problems create the biggest barriers. The problem is that we aren't told what the student backgrounds are. I find out after the first writing assignment.
>
> They need extra classes just to learn English so the extra courses are needed just to catch up. These requirements would take up courses that ESOL students need in basics.
>
> They don't have the background knowledge in general. [They have a] difficult time, to some degree. [They] don't have the same reference point -- culture. For example, I may refer to Goldilocks and they have no idea who she is. [They] may not have language or exposure in their background to handle the work].
>
> [It] has had an effect. Even though ESOL [students] are supposed to be able to understand English when it comes to word problems, verbal and written instructions, there is a problem with ESOL students.

At Urban, teachers spoke little about differential effects on minority students. When they did, they seemed to have few concerns. And in contrast with United Nations, the foreign-born students at Urban were primarily Hispanic or Greek. In general, teachers felt that these students did quite well, telling us that "foreign born are the best students. Greek girls were very good; Greek boys were not as good [because they are] allowed to run wild;" "my Asian kids are fantastic. Some come with no English and get 95s in foreign language -- they're learning both languages at the same time. [And] Hispanics have at least one class in Spanish;" "with math, foreign born kids are usually ahead of us anyway. Maybe in English it would be a problem but not in math and science. A very small number of teachers expressed concern about how well these students were being served: "That is a problem. We have a lot coming here -- a lot don't speak English. They'll pair them with another kid, for example, a Greek who translates. [We] need an ESL class here because it must be hard for them when they don't speak English."

3. Students with Special Needs (Special Education) and Vocational Students

Across the five high schools, about three-fourths of the teachers we interviewed reported that the new credit requirements did not especially affect either vocational students or students with special needs. They seemed to think accommodations were being made to support those students' academic needs. Several noted that special needs students were having more trouble with the functional tests than credit requirements. With respect to vocational students, teachers described how vocational programs were dying at most high schools and that, for students still pursuing some vocational emphasis, scheduling was a problem, albeit not an insurmountable one.

Concern about the functional tests and whether special needs students should be required to take them kept surfacing during our interviews. Comments such as, "the functional tests make a difference to [special needs] students more than graduation requirements;" "special ed -- [it's] got to be tough on them. Passing the functional tests is hard for them." Others hold those students in admiration, noting that "whatever they do, those kids seem to get by. They pass the functional tests, so they do okay."

Various subject area teachers commented on how special needs students fared in their particular area. Art was described as a positive experience for many, bringing together students of all different ability levels: "art classes [they] usually can deal with and [they] can get math through resource. [The requirements] haven't hurt them -- if anything, [they've] exposed them to some new areas. Functional tests [are a] bigger deterrent."

About a quarter of the teachers, however, said that the new requirements were taking it harder for special needs students to be successful: "More requirements in math and social studies and science has made it difficult for them. Some are thrown in regular courses and are not able to handle it as well as [they] could have if [the class were] done by a special ed teacher." In responding to a question about special needs students, another said, "yes, [it] penalizes the low achiever special ed [student]. They do not get enough remediation. [There] needs to be more attention to low achievers."

Teachers seemed to think that accommodations were being made for vocational students. Many spoke of vocational students' tough schedules, how vocational education was dying at the comprehensive high school, and a few described how vocationally oriented departments had become particularly entrepreneurial in attracting and retaining students. About the schedule, we heard that the "biggest problems is they don't have [any] flexibility in [the] schedule," with some incredulity as to how the students fit in required and vocational courses. One noted, "I don't know how they balance with Vo-Tech but certainly their skills are excellent." At the smallest school, Rural, a teacher remarked on the flexibility that perhaps only a very small school could provide: "we work around the problem by creating a flexible work release program." And yet another voice lamented the schedule problem because she lost students: "They have to meet the requirements so there's no room in their schedules to take me [business ed]." In one school, we heard about the increased flexibility brought about by a seven-period day:

> I have juniors and seniors. They take English, government, world of work, and one elective. They have time to fulfill everything and still have room for electives. The only time [it] would affect them [would be] if they failed a course. I've had that with some seniors. Then the course they have to make up is their elective.

> [That's] tough to answer. They might be [harder on vocational students] but I don't think at Fast Track they do with the seven-period day. They have opportunity to take those courses.

Several teachers commented on the curriculum, and how vocational students negotiated the new requirements. An art teacher described how difficult it was to meet their needs: "It's too bad they can't find something in fine arts for them. They don't want to take art, music or dance. But if we could find something they were interested in to satisfy the fine arts requirements..." A variety of courses were often available for students: "[there are] more vocational courses offered and technical courses as well." Math teachers commented on how they met the needs of vocational students:

> Now with business students, they still are required to take the same number of years of math in the math department rather than in the Business Ed department. [It] doesn't really affect them.

> I don't think [they have much effect]. We have a couple of [math] courses geared to them. They do well in those courses.

During the first round of data collection, we noted that the business education department at Fast Track seemed unusually entrepreneurial in defining important subjects as under its purvue (e.g., introductory keyboarding as prerequisite for computers) and in marketing its offerings to students throughout the school. This was still so in 1990:

> [The requirements] have caused a bigger push toward academics. Our business department fights it well. First, by advertising to eighth grade parents -- [we] mail a letter to every parent. The principal is an important impact -- he's very supportive. Another same-sized school in the district only has three business teachers. Second, [all the] second-level courses are CM eligible. I sell the fact that all kids must work while in college and good computer skills are a real plus.

One teacher summed up the perspective on vocational students by telling us about the myriad options available:

> [There is the] vocational certificate, the high school certificates, the Certificate of Merit -- more than ample opportunity for these kids who want any certificate. Business education is based here. [At the] Vo-Tech Center they can receive any certificate; [they] have Certificate of Merit there too. [The] only ones [that are] hard to achieve are cosmetology and nursing-health services. [They] have extra hours form the profession, so it's harder to achieve Certificate of Merit.

In sum, the interviews with teachers provided snapshots of how they perceived new requirements to be (or not to be) differentially affecting students at-risk of dropping out, racial/ethnic and language minority students, students with special needs, and students oriented towards vocational programs. Across the five high schools, teachers typically thought that, in principle, there should be no differential effects for those groups of students. When combined with difficulties such as poverty, disorganized families, peer pressure to work, or a lack of home support for secondary or post-secondary education, however, students in those groups elicited more concern.

Views on the dropout rate were generally uniform, with teachers identifying other factor's -- largely ones outside the school -- as the prime causes. Experiences at Urban were particularly poignant. Teachers' perceptions about racial/ethnic and language minority students varied, depending on their experience with those students. Middle Class teachers had the least diverse student population; United Nations had most. Finally, perceptions about how students with special needs and students wanting vocational programs were faring under the new requirements were generally tame. Most teachers felt that accommodations were being made at the school level and that, while juggling and planning was necessary, students were able to meet the requirements.

Conclusion: Teachers' knowledge of and responsiveness to students historically at risk depended on their school and their course assignments (their "tracks").

Recommendation 5.3: Teachers should have access to all students, not just a selected group. The state and local systems should encourage restructured grouping for learning and more diverse and equitable teacher assignments.

Thus, the question posed at the beginning of this chapter, "Who Loses?" seems to demand the answer, "It depends." And what it depends on are the characteristics of the student and the school he or she attends more than any other characteristic. Beyond the patterns of race, gender, and performance lie other subtle patterns: special needs students being mainstreamed without support of the regular education teachers -- what will their classroom experiences be like? These children may well be significant losers. Some teachers may have become just as tracked as their students, so tracked that they tell us they have no knowledge of minority students, special education students, or the "lower achievers". Have some schools created as rigid a caste system among teachers as appears to have happened with students? Perhaps some of these teachers are the losers because of their limited access to and knowledge of all students.

Teachers worried about the policy's effects on more than students, however. Understandably they expressed concerns about changes to their departments, possible job loss, and diminished flexibility. The next section presents these concerns.

Teachers and Departments At Risk

This section details teachers' views on how the new policy affected their work. Included are their perspectives about job tenure, departmental adjustments, and diminished flexibility. The discussion begins by revisiting the master schedule analyses first presented in Chapter 3, showing that, at least by one objective measure, department staffing patterns were relatively unaffected by the new policy. This is especially interesting in light of the interview data suggesting that certain departments felt quite threatened. We explain this discrepancy with the notion that deeply held beliefs about vulnerability persist in the face of evidence to the contrary. First, we discuss briefly the master schedule findings and then turn to the qualitative data.

A review of departmental staffing shifts over time was conducted earlier. This analysis tabulated the full-time teaching staff assigned to each department and enabled us to compare those assignments over a six-year period from 1984-85 to 1989-90. As noted earlier in the qualitative data, teachers expressed fear that certain departments would suffer as a result of the new requirements. This did not materialize in our analysis of the number of staff assigned to each department. As noted in Table 3.13, teacher assignments by subject area only dropped in 4 of the 33 comparisons between 1984-85 and 1989-90. The declines were most obvious in business departments, but even those declines nowhere near matched the significant increases in the other departments. Even unaffected departments like physical education showed almost no change across the six years of analysis after adjustments for enrollment changes were taken into account.

While the actual numbers may not be significant, teachers did make important qualitative distinctions that point to the possibility of some losers in the implementation of this reform. Interview data from teachers help explain some of the perceived losses.

Early predictions from our first round of interviews in 1986 suggested that wholesale changes could take place at the departmental level, with significant shifts in staff as schools accommodated the new requirements. Later interviews and analysis of master schedules did not bear this out. While there were some isolated cases of departments being significantly reduced, on the whole, departments have come through the reform with only minimal impact. Such a summary, however, does not do justice to the concerns of some staff about the negative effects of the policy. Rather than addressing specific departments, most of the concern was with how the requirements restricted the school's options as a whole. While not saying so explicitly, staff were conveying the message that their flexibility in providing for individual student needs was being rapidly eroded. This was particularly true in the one small, rural high school and in the other two high schools that operated on a six-period day rather than seven, which was the case in the remaining two schools.

In one school teachers fretted that their efforts to recruit students in the spring for fall courses were wiped out over the summer by district computers that altered students' course selections to accommodate the tightly scheduled six-period day:

> We can only attract kids for one credit [business teacher]. We recruit them every year in May [for a second course in that subject area] but we lose them by September. The computer says they have already had a practical arts class [so they aren't allowed to take another].

In a similar vein, a fine arts teacher complained about working hard to build some skill in her vocal group only not to be allowed to have those students the following year to continue to build a program:

> It sounded wonderful [to have a fine arts requirement], but it isn't working. We are performers [music department] and we're taking a licking. I go out to performances) with kids who can't sing. It's a fine thing to have kids in class who can't sing, but the problem is that the children I train this year can't come back next year because the computer says they have already taken a fine arts class.
>
> All the special areas are hurting the most [e.g. business, home economics, industrial arts] because these are electives. ... I'm looking forward to a seven period day when students will be able to take electives more freely.

In these tightly constrained systems where the degrees of flexibility are minimal, adding new requirements tends to put more pressure on everyone. One teacher summarized the problem succinctly by talking about time, the most limited resource: "If you want more programs, you have to give us more time. If you want better teaching, you have to give people more time."

Even those people not directly been affected by the requirements felt the pinch of a tightly constrained six-period school day. One English teacher commented:

> When I came here there was only one course in world literature/mythology. I built it up to a full time job. Students really benefited from that , [but] when we have to fit it into all the other requirements there is no room [for this course]. I think on the college level they have to be noticing the lack of education in world literature.

Teachers in the practical and fine arts areas were ambivalent about the new requirements and their effect on student enrollments. While they generally embraced the notion that the requirement exposed many students to be content that they would not otherwise have taken, the tightly packed school day inhibited students from exploring these new-found interests beyond the basic introductory level:

> Kids can't continue in advanced music because there is no room in the six-period class day.

> Kids can't fit in advanced courses because of their packed schedules.

> As students have to meet the fine arts and practical arts requirements, they are having to drop languages to fulfill the requirements. We are loosing juniors and seniors in the third and fourth year of foreign language.

Another foreign language teacher commented that local certificates required more foreign language than the state's Certificate of Merit. Yet, when the state certificate replaced the county certificate, upper-level students (third and fourth year) would be lost to the language program "unless a seven-period day was instituted."

The new requirements mean that students have fewer elective options. Consequently, those areas are being hit the hardest:

> They are being ravaged; they are not capable of functioning any more. Home economics and business have shrunk to 1/4 or 1/8 of what it used to be. ... They will have a traveling type teacher in there which will affect the quality of teaching.

> We are losing business students because business classes are elective courses and there is less time for students to take them.

If there are very limited periods in the day, then it is also true that teachers will be spread thinly. At small Rural High School which has tried to increase the number of honors options, one teacher commented: "If there is going to be more honors courses, then drama [fine arts course] and journalism [practical arts course] must be eliminated. There just aren't enough bodies [teachers] to fit it all in."

Teachers also voiced concern about changes in course loads that forced teachers to take assignments in other academic departments: "We have a couple of people teaching math who aren't in the math department." The concern was that some teachers were teaching in areas where they weren't necessarily skilled or qualified:

> Some people are teaching courses they are not certified/prepared to teach because of the seniority system.
>
> Some teachers are teaching out of discipline. For example, we have a home economics teacher teaching U. S. history.

Another important concern raised by a number of teachers was that class size might be altered as a result of some of the new requirements.

> Last year we actually cut half of a person and had to drop two courses and we increased the class size in all the others.
>
> I'm the only person teaching biology. If you add one course to my schedule, you have to delete something somewhere else. By adding AP biology caused us to increase class sizes in other classes. In our general science class we went from 15 to the low 20s when there is only room for 20.
>
> In the past (before the new requirements), we used to have 300 ninth grade students enroll in art. Now we have 600. We have added no new teacher and there are the same number of sections. There are 42 to 46 students in each class on the roll. ... I see a profound difference when I have a class small enough to work with kids who are frustrated. In larger classes the frustrated ones give up and I don't have time to help them. The real issue is how to reduce class size.

One of the effects of the the new requirements was renewed competition for students among subject-area departments. Some viewed this competition as healthy. One principal commented, "The competition between departments is good. Anyone that sits back and tries to recruit students under the old curriculum will lose students. Each department has to make courses attractive for students." The majority of teachers, however, were concerned about the competition they were drawn into:

> It has taken away some of our students [from business department]. Students aren't taking our courses, more have enrolled in fine arts classes. . . . We now have borderline enrollments. Shorthand has 16 students and needs 15. If two kids change their mind this summer we lose our course. Computer science is cutting the throat of the other practical arts subjects.
>
> We lost a teacher [in business] because of lower enrollments due to students enrolling in fine arts classes.

Teachers in non-required subject areas had long voiced concerns about their second-class status. Interestingly, several teachers said their status had not changed even when their courses became required:

> I have this big conflict. I think the new requirements are hurting business education [even though business course count as part of the practical arts requirement]. We are still stigmatized and there's no need for that. The conception of what we teach - that it is vocational. We still have to deal with that, being second class.
>
> We [in home economics] are always overloaded in the second semester. Our courses are dumping grounds for failures from academic courses in the first semester. We used to have a maximum of 24 students for safety reasons, but now we are up to 32. It's like a zoo; I need a whistle to control them.

And yet another teacher in a subject area that is required (science) commented on how that subject area suffered from neglect and not being part of the increased requirements. The focus on one area (e.g. mathematics) takes focus away from other areas (e.g. science):

> It is difficult for scientists and science teachers to understand how little emphasis is placed on science education in this state. Science and technology impact on everyone every day. I think this lack of emphasis is going to tell [in the future].
>
> We need to increase science credits and not just math.
>
> Administrators do not take into consideration the kind of courses taught when making staffing decisions. They just use gross formulas: x students -- y teachers without considering that lab classes take longer to prepare for and there should be more student contact.

None of these comments make the most obvious loss voiced by teachers any easier. While not as problematic as was initially hypothesized, job loss was nevertheless on teachers' minds:

> In theory there should be an increase [in staff in vocational department because of practical arts], but it's not happening. We have lost a woodshop and printshop teacher. A retiring teacher may not be replaced. Most of the reduction is in the vocational areas.
>
> We may lose teachers to make room for teachers in required areas. For example, we will lose business teacher and the business courses they teach as they hire new foreign language teachers.

> One social studies teacher is retiring in June. There is concern about his not being replaced.
>
> I have lost, lost, lost [in business education]. Six years ago I had 13 teachers. We are now down to seven. In the 1970s we had 18 or 19.
>
> Teachers are getting surplused and moved to another school. In the future we might lose our jobs.

These concerns cannot be ignored, despite the master schedule analyses that show few, if any, negative effects of the requirements on departmental size. Teachers quite clearly felt vulnerable and voiceless in the policy implementation and discussions about whether they will have jobs and how these jobs will be constrained by the new requirements.

Conclusion: The new requirements tightly constrain teachers' flexibility and capacity to build powerful curricula.

Recommendation 5.4: The structures of schools should be reorganized to offer more creative alternatives to the traditional six- or seven-period day.

Conclusions

Through the use of quantitative (transcript and master schedule) and qualitative (interview) data, this chapter has detailed perceptions about those students most at-risk as this new policy is implemented. Two general conclusions are noteworthy here. First, patterns of exclusion by race, gender, and academic performance persist despite the new policy's intent to encourage more students (presumably more types of students, also) to take more academic courses. Second, teachers feel diminished flexibility and fear further squeezes on their time and professional prestige because of the policy.

CHAPTER 6
WHO'S IN CONTROL?
KEY ACTORS AND THEIR INFLUENCE ON POLICY IMPLEMENTATION

A key question in any policy initiative is how much influence do those affected by the policy have over their work lives. We explore that in this chapter, asking key participants how much influence they have over the educational process, in general, and the implementation of the new policy initiative, more specifically. Findings are based on interview data and organized around perspectives from four role groups: state department staff, central office administrators, building administrators, and counselors. We begin with a discussion of more global policy development and implementation issues at the state level and move toward a more micro-level analysis of the influence that counselors have on students' academic opportunities.

State Staff Perspectives

Maryland State Department of Education (MSDE) staff saw their influence in matters of policy implementation exerted in two ways. The first was through their contributions to the development of the policy; the second was through the provision of technical assistance and support to local educators as they implemented the new policy. But MSDE staff also voiced several frustrations about their inability to make the new policy accomplish what they had originally hoped it would.

1. Policy Development

Key staff contribute to policy development by recommending various positions that the State Board might take on a particular issue. For example, when the State Board was ready to deliberate the awarding of diplomas to special education students under the new graduation requirements, state staff drafted language that eventually became the High School Certificate of Attendance. State staff also act as facilitators when the State Board appoints commissions and task forces to address an issue. MSDE staff played a central role in the work of the Maryland Commission on Secondary Education. They helped coordinate meetings, find resources, bring in speakers, and draft sections of the commission's report. While all of these tasks were in the background and not visible to most outsiders, they were critical to building consensus at the state-level about the shape of the new policy. And consensus is a key part of getting work done in Maryland education.

2. Technical Assistance and Support

Technical assistance and support is a generic label for the major part of the work state staff thought they were accomplishing. During our interviews, staff offered many examples of what techanical assistance and support entailed. One of their support functions is to provide a coordinated, planned perspective on policy implementation drawn from across different divisions in MSDE. Working on to the new requirements, they accomplished this by creating an informal team of staff from several divisions who met periodically to review local concerns and build consensus for a departmental position. In the words of one participant: "I think it's been very helpful; one of the best things we ever did was put that small committee together so we could talk these things out. At least we all knew [what the issues were]."

One staff member offered an important historical perspective on this support function. Reflecting on the state's changing influence at the high school level, he commented:

> This past decade has moved ahead further in our high schools than previous decades did. In previous decades we [state] were a kind of laisse-faire organization, a good old boys network. Whatever the locals wanted to do was okay. If you could help them in some way, do it. That all changed when David Hornbeck came in. The department took on a direction that provided leadership, it was a whole new exciting ballgame.

The specific nature of technical assistance takes many different forms, ranging from providing leadership at meetings, convening special conferences (e.g. Maryland's Statewide Conference on the Maryland High School Toward and Beyond the Year 2000), or presenting the state's position to local staff. As one state staff put it, "It's our job to provide assistance as we can and support to assure that the implementation [of state bylaws] comes about." Two other comments elaborate further on the kind of implementation assistance state staff provide with regard to the new graduation requirements:

> Technical assistance means we have regional meetings where we deal with specific recommendations, asking local people to go back and put them into place. Secondly, a major conference was held in which there were teams invited from every local school, over half the participants were teachers. ... I've also been to well over half of the local school districts to make presentations. Many of these were done to follow-up the first [RBS] report.

> I think the state has been giving information, technical assistance, and interpreting the bylaw. We have also offered some staff development because we put a lot of money into one big high school conference. We also set up liaison communications to have ongoing meetings twice a year with high school directors to bring things to their attention. I have gone out and given inservices to guidance counselors. We also developed a brochure "Graduation Requirments for Public High Schools In Maryland" [1988] that was small, handy, not cumbersome with answers to questions that were most frequently asked.

Technical assistance also has involved helping local districts determine which courses qualify under different subject requirements. But assistance can go far beyond the mere responding to individual district requests. Indeed, state staff are involved in the development of "curricular frameworks" -- broad statements that describe the intent of a particular subject area requirement. These frameworks are used as guidelines to help districts in assigning courses to given disciplines (e.g., Is journalism a practical art or an English course?).

3. Constraints

State staff considered their technical assistance and support roles important, but thought they had only limited ability to effectively assist locals. An obvious, but often overlooked constraint, was their difficulty in remaining focused on a task. Once a bylaw is put into place, more often than not, they go on to something new. One staff member commented:

> I guess there are a number of factors that mitigate against things happening the way I would like. One is that the pendulum of education swings ever faster. No sooner had the five reports been out, then we were trying to deal with other issues. Local school systems had just found it increasingly difficult to keep up with all of the new priorities, all the new reports.

Another staff member added that a lot of momentum was generated early in the process, but the state did not capitalize on it:

> Initially everyone had a lot of involvement, we had a commission with five task forces and they involved key positions throughout the state. I think a lot of momentum went into the development of the high school study and the books [the five task force reports], and everyone waited for the ball to be picked up further and it wasn't. I think we lost the momentum when the study was first released. When something is first released there is always a certain amount of attention because its new. I think momentum capitalizes on momentum and it's not that we shouldn't make things better all the time, because we work to make things better all the time, via technical assistance and different types of programs and so forth, but when you have a big study like that you owe it to yourself to continue the momentum and follow it through because people are paying attention and waiting and saying what does this mean.

Staff also acknowledged that the state gave little financial assistance to insure that the recommendations took hold: "The state never invested much money in helping at the school level to look at the reports and try to do some planning to bring about some of the recommendations."

Consequently, a pattern of confusion, and eventually ambivalence, emerged around the state role. State staff, for their part, were constrained by a larger institutional culture which dictated a "hands off" position when dealing with local districts. One staff member described it:

> I am seeing a shift in roles. I'm a bit concerned that from one side of our mouths we are saying there ought to be more local autonomy, there ought to be fewer strictures (that's the key word in the report from the recommendations) but from the other side of our mouths I see us moving toward increasing goal statements. ... **We have never at the state level gone into a school, except as invited by central office staff. There has always been that line that divided what the state did and where it acted. So our real influence has been centrally not at the school level unless in the few cases where we were asked to help at the school level.** [emphasis added]

Another concern voiced by several state staff was the limited way in which much of what the Commission on Secondary Education recommended was actually being translated into practice. One staff member eloquently voiced his frustration about insufficient changes by stating:

> I need to be positive about this because I think in the long run kids are better served, but it's just that I had hoped to see more movement in certain directions than we had. For example, we still have discrete subjects, taught in isolated classrooms by faculty members who have very little time to plan and be with teachers from other disciplines. Scheduling has eliminated much that we would like to have done.

That same person had a perceptive answer to why local educators did not respond to the requirements more creatively:

> ...The traditional approach to delivery that local boards have expected and the fact that they, by law, have to provide reasonably uniform approaches, "reasonably uniform" is a legal quote from the state law, so that individual schools, and school staff until recently have not gone out on their own too far. I have a theory about that. There are two imaginary lines and as long as you stay within those two imaginary lines, you have no problem. The minute you fall below expectations, there will be massive input from outside the school. The minute you go above the line there will be massive pressure from your peers.

State staff indicated further concern about the potential impact of the requirements on the high school tracking system:

> The thing I was worried about and still worry about is are we making a bunch of "haves" and "have nots". If I have an upwardly mobile family and I want my family to have the best that is offered in my school, I am going to work like heck to make sure my kid gets a Certificate of Merit. As I do that, as as the school pushes toward that, how much energy will be left for those that do not have parents pushing at home, that don't have the inner discipline, or have not been trained to move on. Is there going to be enough energy in the school to give the time to work with those kids who need to be taught basic skills.

State staff also pointed out something that has already been mentioned in Chapter 3; that is, whether a centrally defined policy can adequately account for the many local contextual features that determine a district's response to new mandates:

> I have a general disillusionment with the ability of the state in all areas. It is very difficult to put policy in place and have it go the way you envision it because the locals are so different from one to the next ... I don't believe the diploma you give to one school necessarily ought to be the same one you give to another.

A final concern was whether the state was taking a strong enough position on key matters. Some staff feared that locals had so much discretion in deciding which courses qualified under which subject requirement that almost anything could qualify.

> It's been evenly split across the state. There are those local agencies that have administered the bylaw as it was written, and have stood their ground with it. There are other locals who have felt that many things should be counted. Things that traditionally would not be in that area, such as the yearbook. In one local, ROTC was proposed as being a vocational area even though it doesn't fall in any vocational programs. ... There are still mixed feelings across the state about the [practical arts] credit. Chairing [a curricular framework] committee was one of the most challenging things I had to do in my life, I literally felt like I was walking a tight rope between the two factions on the committee...Every time I went to a meeting we had a voice on one side saying we want all the flexibility, and the voice on the other side saying you ought to abide by the law. One side wanted a very strict guideline about what alternatives should count, and the other wanted very open so they could decide.
>
> The state board added the practical arts requirement. Yet, when it came time for the board to take a stand on saying what constituted an acceptable course in those four categories, the board refused and that has continued to cause some problems.

This lack of momentum may be part of an age-old problem in policy implementation; just because something is on the books does not mean that everyone will adhere to it. Follow through is essential:

> If there is a change I would love to see on the state level, it is the redefining of credits and the elimination of some of the hour requirements [1 credit=132 clock hours] that exist, or at least providing some other alternatives and then marketing those alternatives. That's the problem that I've seen all along. There has really been very limited marketing of the five books of recommendations and if you go back and read what those task forces and then the commission recommended, they are recommending the flexibility we are talking about, they're recommending changes in instruction. It's just that we have not marketed it well at all.

Or, to sum up: "A bylaw and a report does not an implementation plan make."

Conclusion: Constraints on state staff, such as competing priorities, lack of funding, and institutional culture limited full implementation of the new policy. Two aspects of the policy that were not fully implemented were (1) the full range of reforms recommended in later reports by the Maryland Commission on Secondary Education and (2) the provision of training and technical assistance.

Recommendation 6.1: MSDE should sustain initiatives sufficiently to ensure adequate implementation. This should be coupled with the recognition that limiting the number of new initiatives should allow its staff the time and resources to be truly helpful to local systems throughout the implementation process.

In summary, we found state staff feeling that they had the potential to influence education in a constructive way. Indeed, they were quick to share concrete examples of activities they were engaged in that were having a positive effect on Maryland's students. Yet, despite all that potential, there appeared to be significant impediments that often stood in the way of their maximizing their roles.

District Administrators' Perspectives

Administrators at the district level offered two different perspectives on their influence over policy. On the one hand, they discussed local systems often moving beyond what the state required; on the other, they lamented the limitations of their control once an issue reached their level.

1. Proactive Stance

It is clear by now that all five districts responded differently to the new requirements. Several district administrators assumed a fairly proactive stance, with some going beyond what the letter of the law called for. In the words of one policy analyst, it's almost "one-upmanship," or "I'll see you and raise you five." For example, instead of just adding a course or two to the fine arts curriculum, one district used the opportunity to upgrade its entire fine arts curriculum:

> A decision was made at the county level not to fill requirements with just one course in fine arts. At the same time we did not want to cause a crisis or problem in scheduling nor dramatically alter curriculum/course offerings. What we did was to change the objectives of courses to match the four key objectives outlined by the state (performance, aesthetics, history, and criticism). Teachers had not really been teaching these even though it was in the curriculum. Most of the focus had been on performance. We then produced curriculum and instructional guides, and trained the teachers to use them.

And administrators in this district did more than just alter the curriculum. To ensure that the new curriculum guides were being used, central office content specialists designed and delivered mini-training programs for building principals "so that they would know what to look for when they evaluated teachers of fine arts courses."

One district, which regards itself as being one step ahead of the state, tries to anticipate changes in state policy and, in fact, began requiring three years of math one year before the state did. Several districts had requirements that were more demanding than the state's (e.g. 22 credits, a third year of science, a foreign language, or additional certificates). As one supervisor commented: "We have our own advanced certificate. We've always had advanced courses, we are at the forefront in this area. . . . What these requirements call for, we already felt was important and had already."

Another example of district proactivity was the creation of a very visible district steering committee to interpret and recommend local policy for dealing with the new requirements. The steering committee was divided into four groups: administration, local requirements, curriculum, and Certificate of Merit. "We identified problem areas to get smooth implementation," commented one administrator in that system.

All of the systems also reported developing and widely disseminating brochures or pamphlets outlining the requirements. These brochures were given to students each year prior to course selection so that they, at least theoretically, knew what was expected of them.

A final example of districts responding in a proactive way has to do with the record keeping systems they developed to keep track of the requirements. These records were like alternative "report cards" for individual students. In one system, the "report card" displayed major subject areas down the left hand side and four columns down the right: the credits required, credits earned, credits in progress, and credits needed. The Certificate of Merit courses had similar charts, with additional information about the student's grade point average. These report cards were designed to help students, counselors, and teachers quickly see how students were progressing toward the requirements. In principle, such systems also could assist counselors, who invariably become responsible for any new record keeping systems that affect students.

2. Concerns

Despite their often proactive response to the new policy initiative, district administrators also had their share of frustrations and concerns in trying to implement the requirements. Frequently, organizational constraints limited their response.

Communication was a common complaint. While many school staff said they didn't know what was happening, central office staff said they worked hard to get information to the building level, but often it fell on deaf ears. For example, one district administrator commented:

> The information has been given out to the principals and to the guidance counselors. But how much of this is clear to individuals is unclear. ... I have gotten on the principals this year because I have the feeling they aren't on this [the requirements] as much as they should be.

Central office staff acknowledged that they had limited control over instruction. Much of their contact with it was through the principal's observations of classroom teachers. There were so few curriculum specialists to go around that it was impossible for them to have significant contact with classroom teachers.

Administrators also talked about the problems of trying to fit everything into an already crowded school day. Some systems responded by adopting a seven-period day, but for others that simply wasn't economically feasible. One administrator pointed out that students in special programs are often hit the hardest:

> At one point in time we had a seven-period day. The principal could reschedule requisite vocational courses (so that students could get all the requirements in) but now we don't have room for that. There isn't room for failure for the youngsters in the vocational program. It's that tight. It's a six-period day now. We have to provide for at least fine arts for those

> youngsters. We have to be creative. Now it isn't easy to do. Before, we had Saturday schools or we could refer them to summer schools. A lot of things we do, we're not doing for the majority population. They are being penalized for reform aimed at a minority of students. For the vocational students, once they fail, there's no way to make it up. These extra requirements are superfluous to what the students want to do.

While some administrators were proud of the fact that they often anticipated state actions and initiated their own requirements, simultaneous state and local level change created confusion:

> The state had its minimums, they [local systems] have their own minimums. The counselors asked [us] to work with them at their inservice. It was utter confusion! Some counselors were working with an alpha basis (i.e. letter grades) while others were on a 0-100 scale). Some of the students entered in 1983/84 while others 1984/85.

> I am bothered by the duplication of certificates. It's confusing for kids and everyone. The state needs to take a more active leadership role -- I don't know how we could do that.

In a similar vein, while there was universal acknowledgment of the need for better record-keeping systems, in the larger scheme of things, a fully integrated system of records rarely moved up on the list of district priorities. As a consequence, many districts struggled with less than adequate records.

> Record keeping is our weakest part. We've got records that I consider to be in deplorable condition and they're all kept by hand. ... We have not moved quickly enough to automate records management. The counseling staff typically handle that and they are dramatically understaffed.

Conclusion: Districts' posture relative to the state and the implementation of state mandates ranged from entrepreneurial and proactive to reactive, depending on local capacity.

Recommendation 6.2: The state needs to acknowledge that there will be varied local responses and develop strategies to work with districts in altering those responses that are less desirable.

Conclusion: Data and record-keeping procedures associated with course-taking are often inadequate for making informed decisions at the local level.

Recommendation 6.3: Both state and local leadership should encourage the development of more systematic data on course-taking patterns. Leadership should encourage the use of such data in making decisions that will improve opportunities for all students.

In conclusion, like their state-level counterparts, school system central office staff were upbeat about their potential to positively influence school improvement efforts. They were quick to credit their own districts for outdoing the state in tightening standards. On the other hand, the reality of constraints tempered much of that enthusiasm. Poor communication, lack of direct control over instruction, a poor record-keeping system, and inability to creatively schedule students all converged and sapped much of the enthusiasm for reform.

School Administrators' Perspectives

School administrators responded much the same in their interviews. While they were one step further removed from decisionmaking than their district counterparts, they were not shy about offering their views. Principals and vice-principals in the five schools we studied focused on the readiness of their district and school to deal with the new requirements. At the same time they were more than willing to share their thoughts on how the state or their own district had not taken full advantage of the opportunity presented by the policy change.

1. System Readiness

There was general consensus that schools systems were ready for the new policy when it took effect, or were able to quickly make the necessary changes.

> We were prepared at the onset for the new requirements. No major reorganization was necessary.

> The [system] did an excellent job preparing for the new requirements. There were inservices and summer work examining courses to see if they met high level thinking skills [necessary for qualification as a Certificate of Merit course].
>
> The county has already gone to a seven-period day.

Administrators expressed some pleasure in the fact that the new requirements forced some of their teaching staff to rethink their approaches to instruction. One principal, in particular, applauded the competition that the policy encouraged: "The competition between departments is good. Anyone that sits back and tries to recruit students with the old curriculum will lose students. Each department has to make courses attractive for students."

A principal echoed district administrators by saying that little had to be done at the school because the county had already passed more stringent requirements: "The state requirements have had little impact because county requirements are either greater or more prescriptive in terms of the curriculum ... The requirements are not a big deal here because of high county standards."

In anticipation of the new requirements, one school decided to "semesterize electives" [the rest of the program was organized around full year courses] to give students more options in fulfilling the fine arts and practical arts requirements. That school was also grappling with the issue of student scheduling. The principal commented, "We are looking at other schedule alternatives, e.g. modular. We are reading widely about scheduling techniques because we are so small and kids get blocked out of courses. The greater the requirements the greater the scheduling pressure."

2. Failure to Take Advantage

Building administrators in the five high schools gave examples of how their systems had anticipated or were adapting to the new bylaws. However, their language indicated that they were primarily meeting the letter of the law. They did not mention creative responses to the mandate. Indeed, there was almost a feeling that schools had been given an opportunity to make some significant changes and that they were not taking advantage of it.

> I would like to see the county build on the state requirements and require more of our students.
>
> We have had a few state workshops and we spun around some ideas at the county, but we have not seriously addressed the problem [of adding more rigor]. We could start with Certificate of Merit and spin off to other areas. It is not too much to expect all kids to be analytic, critical problem-solvers.

> The regulations gave us an open door to be more flexible, but we artifically impose restrictions on kids [by using artificial tracking].
>
> Time is the biggest disadvantage of the new requirements that can be overcome with creative changes in scheduling. This is still an untapped potential. We haven't taken advantage of this the way we should.

One administrator criticized the profession for failing to meet the needs of students: "We need to re-evaluate the format of secondary education. It doesn't fit our clients. We are losing kids who are eager to be in the adult world."

The blame was not always placed in local schools. Administrators were quick to say that the state needed to be more involved in leadership.

> The state hasn't done much. There's a lot of opportunity [fostering critical thinking, analysis, and synthesis]. It's a shame they can't be more prescriptive.
>
> We need clarification. The state needs to say what the county is allowed to adjust and what is set. The booklet [forthcoming explanation of the requirements] will be good, a little bible to clarify some of this.

Conclusion: Implementation proceeded largely in a pro-forma manner. There were few examples of creative restructuring or reorganization in light of comprehensive reform.

Recommendation 6.4: The department should encourage more creative solutions and responses at the school level.

Conclusion: There are significant large discrepancies among and between both central office administrators and building administrators in their levels of preparedness and ongoing knowledge of the reform.

Recommendation 6.5: Communication among the various levels of the school systems must be improved for full and effective implementation of policy reform.

School administrators' sense of influence over changes in graduation requirements can best be summarized this way: they comply with letter of the bylaw but fall far short on the spirit. Several were proud of the fact that their schools had weathered the storm without having to make too many accomodations. Yet, whatever sense of accomplishment administrators felt was tempered by the realization that much more has to be done to strengthen instruction. Just requiring another math credit does nothing to indicate what the content for that third credit should be or the form that instruction should take.

The Counselors' Role in Shaping High School Pathways

We now shift our focus to a level of schooling much closer to the targets of the new graduation policy -- students. Our interest is in counselors' perceptions of their role in shaping sutdent courses and track assignments. Previous research (Cicourel & Kitsuse, 1963) has shown that counselors shape students' judgments about appropriate courses and appropriate levels of difficulty. They also shape students' expectations and aspirations in subtle and powerful ways. This analysis examines how counselors view their work. Specifically, we asked counselors how their roles had changed with the new requirements, and what they took into consideration when helping students make course selections. We also look at students' perspectives on how counselors influenced their course selections. We were particularly interested in how students thought counselors would respond if students asked to undertake more difficult coursework: Would they encourage? Discourage? Subtly dissuade? We were also interested in how they ranked their counselors among influential people in the course-taking process: Who helped them decide what courses to take? How did they go about making those decisions? A series of questions probed this decisionmaking process.

1. Views of counseling by counselors

As stated above, we were interested in how counselors saw their roles in shaping students' high school careers, particularly in light of the stricter requirements. We asked them what role they played in interpreting the new requirements to students and whether that role had changed over the past four or five years. In response to the first question, overall, counselors described their roles as (1) information-giving, and (2) monitoring the requirements. While analyzing these data we also uncovered two additional themes worth elaborating. The first was the notion of counselors as gate-keepers and the second, a theme presented earlier in the chapter, the limited influence that counselors thought they had.

Regarding the question about counselors' changing role with the new requirements, about one-third (39 percent) of the counselors interviewed said their role had shifted so that now they do more information dissemination, one-quarter (23 percent) mentioned an increased emphasis on student record-keeping, less than one-third (30 percent) reported no change, and a small percentage (8 percent) pointed to increased accountability as a result of the new requirements.

The role of information-giver. When describing their information-giver role, counselors emphasized the importance of dissemination of proper information in a timely fashion. They wanted students to know about the requirements in sufficient time to meet them all, without placing undue

186

pressure on their senior year. One remarked that, "I try to get all the requirements out of the way so that the senior year can be flexible." Another described the counselor's role as, "The front line -- [we] make certain kids are aware of what they need from eighth through twelfth [grade]." One counselor noted that, as department chair, part of his role was articulation with middle school guidance counselors to ensure that students received full information. Several counselors also described meeting with teachers, parents, and students in order to disseminate information accurately. The counselor who listed these responsibilities was typical: "[We] review credits during registration time, give parents information. [We spend time] updating credit information. [There are] nighttime meetings with parents explaining the information, individual contact with students." Only one counselor thought that he had information dissemination down pat:

> Well, that has been a standard counseling role since I entered counseling....My blueprint has become very firm. The kid has no margins, parents have no margins [because the] elite schools have additional requirements. My blueprint is 90 percent done for me. I have to make sure the student follows that blueprint.

Practical and fine arts credits were an aspect of the new requirements that counselors indicated needed extra explaining. Several noted that students remained unsure which courses would satisfy those stipulations, often with good cause. For example, one counselor suggested:

> For the most part, kids understand the requirements. The confusion is in the practical and fine arts. The county changes the designation from time to time. Interpreting the practical arts [requirement] is the issue. Things [courses] are counting as two or three things, so doing credits is difficult, for example graphic arts is fine arts.

The role of monitor and record-keeper. Although the two major role descriptions overlap, we felt it important to discuss each separately. The role counselors play in monitoring the requirements and record-keeping emerged as counselors described their responsibilities. In describing this role, one counselor said that he now spends, "More time reviewing records, especially seniors. We are the keepers of the records. Like it or not, it will be our fault if someone is halfway through the senior year and doesn't have fine arts or practical arts filled." Others echoed his concern:

> Now [we] have more detail in keeping track of what students need. [A] lot more record-keeping but not as much as I thought it would be.

> [It's] much more time consuming. More time with record-keeping.

> [We] have to be much more careful when it comes to reviewing the records because [there are] so many more requirements. [We] need to make sure students are taking exactly what they need.

The role of gate-keeper. One aspect of the counselors' role that particularly interested us was gate-keeping. That is, if counselors influenced students' aspirations by sorting them into curricular programs or tracks, how would they describe the criteria or student characteristics they looked for in making those decisions? In other words, we asked counselors to describe what they considered when helping students make course selections.

Several counselors mentioned ability or aptitude as a prime criterion in course selection. These were often defined as "past achievement," suggesting that the tracks into which students had already been sorted would, by and large, continue in their high school careers. Counselors mentioned:

> [Their] past achievement, career goals, post-secondary educational plans, [and] personal interests.
>
> Previous sibling, kid's goals, academic ability (CAT scores, grades, teacher input), [and] parents.
>
> Past academic record, future plans, likes/dislikes, teacher recommendations, [and] parental contact.
>
> CAT scores, Functional test scores, curriculum choices (academic, business, vocational), student interests, and special talents.

The notion of "career goal" is embedded in the criteria used to sort students into tracks. This confirms that one way students are sorted is by their vague aspirations for adult life, first expressed to high school counselors when they are age 13 or 14. One counselor placed full emphasis on this, telling us that she looked at, "What they want to do when they leave high school, if we can convince them that there is a correlation which is sometimes very difficult." Another emphasized "their abilities, aptitudes, motivation, career goals, most importantly what they need to make it in life," but tempered it with a strong academic orientation: "No matter what [their] goals are, I try to encourage them to take as many academic courses as possible."

Some counselors also listed considerations such as special talents, student interests, and parents' recommendations as the determiners of course placements. Usually, however, these were mentioned after ability-linked criteria and career goals.

Lack of influence. One consistent theme we found in interviews with counselors was the lack of substantial influence over the decisionmaking process. Counselors often mentioned that students' paths were fixed already; all they did was plug students into a prescribed set; or that others usurped their authority in truly advising students. This is most interesting in light of students' views of counselors (discussed next) as advisors and helpers.

For example, in discussing his lack of influence over shaping students' learning experiences, one counselor noted that the "departments make lots of decisions. There's lots of pressure on teachers to get kids to succeed. Teachers try not to put kids in the wrong place." In fact, this counselor went on to assert that, "We just put them where they [the teachers] say." Another counselor felt much the same, saying, "Now the teachers all make recommendations about what the student should take next year," and while parents had ultimate authority, "A teacher will intervene if [he or she] doesn't like what the student has signed up for." Still another bemoaned the lack of influence on the selection process: "[The] parents place kids in Certificate of Merit. They may hop around in the first two years, then move out. [It's been] taken away from us as counselors because people have taken it upon themselves to make decisions about the Certificate of Merit or not." He then went on to describe how the process of articulation with the middle school further eroded counselors' professional judgments:

> [We] send a list back to eighth grade; we ask them if we've made the proper selections. We don't know those kids at all. Kids are picking and choosing -- one Certificate of Merit in English, not in another. I don't like that. We give too many choices to kids. If [the student is] in Certificate of Merit in English, (s)he should be in Certificate of Merit in World Geography. The kids do all the selecting -- we don't have any control over that.

The overall picture was two-dimensional. On the one hand, some counselors reported having a great deal of influence (as the "first line", the "most important") over students' course selections and, by implication, their high school careers and even beyond. On the other hand, counselors thought of themselves as "constrained decisionmakers" (Conley, 1988) in their work. That is, the requirements constrained student choices (the "blueprint" was not that flexible), students' past records constrained appropriate options, and the schedule constrained choice even further, suggesting counseling functions that were little more than scheduling, monitoring, and paper-pushing.

We turn now to a discussion of how students viewed their counselors' role and the influence counselors had on shaping course selections and students' high school careers. Students tended to describe a more varied and rich set of roles for counselors than counselors presented to us.

2. Views of Counselors by Students

As mentioned above, academic grouping, or tracking, has been a persistent focus throughout our analysis. In Chapter 4, our analyses indicated that the notion of track is quite unstable and ambiguous. That is, many students have to be categorized as being in a "mixed" track, taking some general courses, some college preparatory, and some business, for example. Thus, assigning students to any particular track became difficult. Nevertheless, we asked school personnel to schedule interviews with students from all the major tracks (typically honors, college preparatory, general, and vocational/business; at United Nations we added a "magnet" track) so that we would talk to a reasonable distribution of students. Given the vicissitudes of student inattention, absence, and reluctance to be interviewed, however, interview samples varied across the five high schools.

At Fast Track, we interviewed more college preparatory and general track students than either honors or vocational/business students. At United Nations, we spoke with more college preparatory and general students than any other category. At Urban, most of the students we spoke with were in the vocational/business track; almost none were from the honors track. At Middle Class we talked with more honors and general students than either college preparatory or special education students. And finally, at Rural, we interviewed more college preparatory students than any other category. Given these differences and given that our data do not lend themselves to quantitative analysis, we offer the following themes and patterns in students' views of their counselors. In some cases, academic track seemed to make a difference; where so, we indicate. In most cases, however, academic track made no difference.

We found three major themes in students' views of their counselors. These were: counselors who gave support, encouragement, or were particularly responsive to a variety of student needs; counselors as information-givers who disseminated information about courses and requirements but served no other role; and counselors as functionaries who were unavailable, disinterested, or unknown. Students also described some counselors as discouraging, controlling, or inflexible, but this was not very common.

The "weight" given to each role was determined by a simple tally of student responses from each track in each school. Overall, students found their counselors to be either good information-givers and supportive much more than they found them to be disinterested and unavailable.

Supporting and encouraging academic decisions. At times students waxed eloquent in describing counselors who served as their advisors in the fullest sense of the word. These individuals were seen as supportive, helpful, and encouraging. They challenged students to take on more rigorous coursework. Some students even likened their counselor to a parent -- someone supportive who was always there for them. In discussing help and support in developing post-high school plans, one student told us, "He takes a lot of time. He doesn't make decisions for you -- gives us alternatives. He's helped a lot especially in the senior year with college searches, scholarship searches. I wouldn't know anything about these things if it weren't for him." Another referred not only to her counselor's assistance with college applications but also to help in overcoming barriers of being a non-native English speaker: "He helps me choose the courses I need, financial aid for college, scheduling. He helped me find someone who talked my language when I first came here and helped me learn English." Others talked about how their counselors encouraged them to take on more challenges, to not slack off, to try for more:

> He pushed me -- tried to keep me in Magnet. He didn't want me to get lazy.
>
> He's everything -- advisory on academics, home life. He looks out for us: makes us put our nose to the grindstone, get our work done.
>
> He tells me what I need and I tell him what I like. He encourages me to take the harder courses and not slack off.

One student told us that her counselor was "like a mother sometimes;" another that "she's like a sister and a mother to me." Describing how important her counselor was in the decisionmaking process, yet another student told us that, "She's right behind my mom. She called me down about my credit check. She's caring and anxious for me." Counselors were also characterized as helpful. One linked being mother-like with helpfulness, telling us that her counselor "is like a mother to me. She is very helpful. [She] has helped me solve a problem." Others corroborated their counselors' helpfulness:

> He has the biggest job, between the principal and vice principal. He's friendly -- always around when you need someone to talk to.
>
> He helps, a good friend, and is honest to tell you if you should or shouldn't take the course you're planning on taking.
>
> When I have a problem, he is really helpful. He always seems like he has time for you.

Another way students characterized their counselors was as providing support of a more general kind and with all sorts of problems. One described how, "He [the counselor] knows all the students personally. [He's] like a doctor -- you tell him what your problems are and he gives you a prescription -- what you need." Another described this general helping role as follows:

> I will see her every now and then concerning an issue. If she thinks you are capable, she supports you. Even if you have your mind made up about something she will still support you. She gives me information and tells me that she will always be there for me. She is the tie-breaker between me and my family on personal and school-related matters. I go to the counselor a lot, whenever I have a problem with anything.

Finally, the remarks of a young woman sum up this kind of counselor. She told us that her counselor was "kind of like an alarm clock, a year-long alarm clock. My counselor is wonderful."

The information-giver. When we asked students who participated in deciding which courses they should take, we specifically wanted to know about the role counselors played and how students saw that role. We were also interested in whether information flowed in a timely manner from the counselor regarding the new requirements and the Certificate of Merit. Many students responded by describing their counselors' role as being exclusively that of an information-giver. Typically, counselors would tell students what courses they needed, what classes were available, checking credits earned against credits required, changing courses, and generally overseeing the administrative aspects of ensuring that all requirements were met. In some cases, this was viewed as a good thing; in others, it was not. Typical responses from students who thought it was all right are:

> [He'd take care of] the administrative tasks of setting up my courses and what teachers.
>
> He helped find courses by going through the credits, scheduling it all in. He was real helpful.
>
> [He tells me] what classes are available, what periods, what requirements are needed, adjusts schedules so I can get in the class.
>
> He helps make sure I'm taking all the classes I should to get the Certificate of Merit and keeps an eye on my grades.
>
> He looks on the requirements sheet and lays out the options. He lets me decide first and then he challenges me.
>
> If I don't like a class, he'll change it. He keeps track of credits. He asked what certificate I wanted and then reinforced that I was on track. He did not recommend any new classes.

Students who viewed this role with some concern said:

> Someone who recommends classes for me. Not a person who can really help me.
>
> She helps me with requirements. I don't come to her a lot. I don't need to.
>
> Scheduling, changes. I've never been to the counselor with a problem.
>
> The counselor told me what I needed and I went from there.

Thus, nearly one-third of the students whose interviews were codeable on these questions suggested that their counselor was there primarily to do record-keeping. They described how the counselor kept track, checked credits, advised about needed courses, ensured proper sequence of classes, and performed similar administrative duties. For many, this was all they expected; for others, there was disdain in their voice as they dismissed these administrative activities.

Unavailable and disinterested. Finally, some students saw their counselors as being unavailable and/or disinterested in them. One depicted his counselor as being a mere functionary but assured us that he really didn't mind: "She's merely a processor. She hasn't gotten involved with anything. I don't mind; [I'm] sort of glad." Others said, "They write on the board and tell you what to pick. They gave a list to students to carry around and turn in later. It makes you do whatever the person next to you does. Not one-on-one." Several attributed their counselor's inaccessibility to the lack of time:

> I hardly ever talk to my counselor. They are always busy -- you have to make an appointment and it takes so long.
>
> School counselors don't have a lot of time for their students. [She's played] very little role.
>
> I don't see her much. They are overwhelmed with paperwork that they don't have time for us.

Whether the fault of the counselor or the timidity of the student, many students appeared to have little contact with their counselors. Typical comments from these students were:

> I don't see my counselor that much.
>
> Up until last year I did not know my counselor.
>
> I haven't talked to the counselor more than three times since I've been here.
>
> I've never really talked to him; I don't know.

To these students, the counselor was someone in the school who expedited certain administrative duties but had little interest in them or time to spend with them.

Quite naturally but disturbing nonetheless, some students described personal conflicts with their counselors: "My counselor gets on my nerves -- good person, bad counselor." Somewhat more gentle was the student who told us that, "Sometimes he's not the biggest help; there's nothing he can do sometimes. I've had some problems with him about getting into colleges." And one student hinted at conflict between the counselor, himself, and his parents when he described how, "He [the counselor] helps with schedules and college. If you want something you have to ask him three or four times. My parents have complained." Another noted conflict over the value of coursework: "She tries, but because I'm interested in business, she wasn't as interested. Business is second class to academics."

A young woman summed up this perspective of the counselor as a disinterested functionary by the young woman telling us that "I haven't had a good experience. I'm too far ahead of her. I like to be in control of my life. No one needs to change my diapers."

Discouraging, inflexible, or controlling. We found that a small proportion of students saw their counselors as actively discouraging them from certain courses or as being inflexible or unnecessarily controlling. Several described having their course selections or preferences overruled, overridden, or disregarded by counselors. Their words again are eloquent:

> The counselor didn't give me any support. I failed pre-algebra in 8th grade -- I knew I wouldn't pass Algebra I. She said 'I'm not taking you out; you can do it.' I said I still wouldn't understand. There was a whole conflict and I brought my parents in. I failed the first test in the course and finally got out to take applied math III.
>
> The counselor has no role. I saw the counselor only in the office, she doesn't provide any help. She doesn't help me at all. They lost my records when I came to the school and said I did not pass the writing test. They took me out of all honors classes because of this. I passed the test.
>
> I'm taking geometry for the second time. I wanted applied math 2 but they wouldn't let me take it because I passed the Maryland Functional Math test and applied math is only for people who didn't pass. Now I'm in danger of failing again. I talked to the counselor and head of the math department to get into applied math and both said no.

> I try to stay away from her. I don't get along with her at all. When I think a class is too hard for me and I put in a request, she left me in it. [There was] conflict.

> He's not influenced me a lot. He gave me the graduation requirements and said, 'here - choose your courses.' I chose them on my own. They really haven't helped me that much. As far as finding colleges, he said in my junior year that I was looking too early.

Others described their counselors as discouraging them from taking more rigorous or advanced classes. Sometimes this was linked to race. One student maintained: "They put blacks and Hispanics in stupid classes. There's a lack of expectations. The counselor is not good -- he just signed off. I bother him almost every day."

Conclusion: As one proceeded down the organizational hierarchy of education, each role goup felt more constrained and less influential than the group above it.

Recommendation 6.7: Roles should be carefully delineated and decisionmaking procedures should be reconsidered to enhance shared decisionmaking processes, particularly in the implementation of curriculum reform.

Conclusion: Despite their perceptions to the contrary, the counselors' role is crucial in influencing students' access to, and beliefs about access to, educational resources.

Recommendation 6.8: Training and technical assistance for this group regarding the subtle patterns and influences of gate-keeping is needed. Counselors' work schedules also need to be altered to allow for more student contact time.

In conclusion, students offered both positive and negative portraits of counselors. On the positive side, they saw their counselor as a supportive person who backed them up in academic decision areas and went out of his/her way to encourage students to stretch as far as they could. Positive counselors also offered useful information about future course and career options. The less flattering picture was of the counselor who showed little interest and was rarely available to assist students. In the rare case, this manifested itself in behavior that was discouraging and very controlling of students' options.

CHAPTER 7:
WHAT'S THE BOTTOM LINE?
POLICY INTENTIONS AND THE PERCEPTIONS OF EFFECTS

This chapter describes policymakers' intent in establishing the new graduation requirements and discusses whether their intent was realized. In it, we also continue our discussion about the effects of the policy as experienced by school administrators, teachers, and counselors. The first section deals with the intent of the policy as expressed in interviews with members of the Maryland Commission on Secondary Education and in the Commission's written materials. The second section describes the effects of the policy as experienced by those within the school systems. This information is taken from interviews conducted with teachers, counselors, and administrators during visits to the five high schools in 1988 and 1990. The final section discusses the extent to which the policy intent was realized, as perceived by people situated outside of the public secondary school system: specifically, a sample of college admissions officers and local employers.

Policy Intentions

State Superintendent David Hornbeck appointed the Maryland Commission on Secondary Education in June 1982. The 23-member Commission was made up of Maryland school superintendents, deputy and assistant superintendents, teachers, school board members, principals, a director of secondary education, a university professor, and community leaders. The Commission was responsible for forming task forces to prepare recommendations for graduation requirements and alternative diploma options, as well as studying a variety of other areas, including curriculum, student services and activities, instruction/instructional support services, school climate, and school administration. In November of 1983 the Commission submitted Recommendations of the Maryland Commission on Secondary Education. Volume I: Graduation Requirements (Maryland State Department of Education, 1983) to the Superintendent. The Commission produced four additional reports but these had nothing to do with the bylaw changing the graduation requirements.

For this part of the study, researchers interviewed five Maryland Commission on Secondary Education members and seven Maryland State Department of Education staff. Several of these Commission members also served on the Graduation Requirements Task Force and formed a representative sample of the 23 Commission members.

The seven Maryland State Department of Education staff were chosen for inclusion in this study because their expertise in the areas affected by the requirements as well as their role in establishing the graduation requirements and facilitating their interpretation at the local level. The interviews lasted from one to two hours and explored the political climate, the deliberation process, and the history behind the recommendations.

Volume I outlined the mission of the public high school in Maryland as to "challenge and help students to grow intellectually, personally, and socially." But it was equally explicit in focusing that mission: "The primary responsibility of the public high school is to promote the intellectual growth of its students." A state department respondent reiterated that mission, stating, "Our primary goal was the academic learning of kids. Personal or individual growth, we'll deal with, but that's not our main purpose." As defined in the Commission's report, intellectual growth, "...includes the ability to reason, to imagine, to value, and to decide."

Of the 12 Commission members and state department staff interviewed, 10 agreed that the purpose of the policy was to raise standards. Five interviewees used those words exactly, and five expressed it in various other ways: "increasing the quality of courses and raising the level of difficulty to make it more challenging;" "creating higher expectations and more incentives for exemplary work;" "squeezing the bullishness out of school;" and "getting students to choose a more strenuous high school academic program." One respondent did not address the issue of policy intent and another (who did not mention higher standards) stated that the policy aimed at creating "a more balanced curriculum." The remainder most likely would have concurred with the interviewee who told us, "Everybody from the outset was along the lines of higher expectations, higher standards, more requirements, and more incentives to exemplary work."

All this talk about raising standards did not occur in a vacuum. "The raising of standards became a necessary agenda item and perhaps the highest agenda item. On that point, I think we were affected by the national attacks," pointed out a Commission member. A state department employee echoed this, saying, "The reform movement hitting the nation at the time, the one in which accountability was being stressed" was the impetus for the change in requirements. We heard little about the third credit in mathematics and assumed that its value was universally accepted. General consensus about its efficacy in raising standards, along with the fact that many other states had a similar requirement, made this policy feature non-controversial.

The desire to raise standards was most clearly the driving force behind the creation of the Certificate of Merit, but a second reason was to develop a mechanism by which to recognize student achievement. According to Graduation Requirements for Public High Schools in Maryland (Maryland State Department of Education, 1988), a booklet summarizing the new policy initiative, the Certificate of Merit is "designed to encourage as many high school students as possible to pursue more challenging programs and to reward students who successfully pursue more challenging programs." One respondent reiterated this by stating that the Certificate of Merit was intended "to recognize those kids who were going beyond those minimums that we identified." This respondent also alluded to the certificate as an incentive, calling it a "carrot."

The Certificate of Merit was difficult to develop, according to several people interviewed, because of GPA. Initially, the GPA was set at much higher than the 2.6 finally agreed upon. "It didn't start out the way it ended" because "it was difficult to sell at the 2.6 standard." After implementation, a related issue called into question equal access to the Certificate of Merit: "It was the inclusion of a foreign language requirement which caused a lot of vocational kids to be excluded."

Along with the Certificate of Merit, the practical arts credit was an area of concern to Commission and state department respondents, both in its original conceptualization and its implementation. This credit was not recommended by the task force, but was included by the State Board because of "pressure from constituencies" and a board member with a vested interest in the subject. A Commission member displeased with the addition of this requirement noted, "The only saving grace, though I think it's absolutely absurd, is computer work counts as a vocational education course. Now that sounds like a compromise if I've ever heard one." The political compromise that was finally struck placed a wide range of eligible courses under the generic label of practical arts, including business, vocational, home economics, and computer subjects. This diversity created real confusion in schools about what did or did not count as a practical arts credit. Indeed, the propriety of computer courses satisfying the practical arts requirement was different across districts, and caused one state department staff to comment that she receives "more questions about the practical arts than anything else." She is continually asked, "Can we count this course as a practical arts requirement?"

Such a concern does not come up about the fine arts requirement, in part because schools have had an easier time classifying courses in this area. The Commission defines fine arts as music, drama, dance, and the visual arts. And the Commission defines the purpose of fine arts: "to involve students in the use of skills, media, tools, and processes, and help students understand and appreciate the unique qualities of the fine arts, its use as a means of expression in many cultures, and artistic styles and works from different historical periods." The fine arts credit, along with the additional math credit, was generally agreed upon as one of the most worthwhile requirements of the new policy. However, discrepancies have developed between the original intent of the fine arts requirement and its implementation in school districts. As one task force member stated:

> Fine arts courses are supposed to be 'ways of knowing' courses, not art appreciation. The idea is to get students painting, singing, acting; to get them to know through the medium. The requirement is there, but my guess is that if you look around the state what you'll find it is art appreciation.

Another aspect of the new requirements was the stipulation that seniors enroll in at least four credits. The reason for this requirement, according to Graduation Requirements for Public High Schools in Maryland (Maryland

State Department of Education, 1988), is "to ensure a strong senior year that prepares students well for the next step into work or study, citizenship or personal life." One respondent explained:

> Complaints were coming into the state department saying that the senior year was so weak and watered down that something needed to be done immediately. There was one system in the state where half of the senior class left at noon; most received waivers to go out and work. A number of students were approaching their senior year needing only one or two credits, and there have been increases in the numbers of students taking those courses in the summer of their junior year and skipping senior year altogether.

This four-credit senior year requirement created more headaches for state department staff than any other. The primary problem was students who had met all the other requirements but were still denied a diploma. Take the high achieving, highly motivated student who wanted to go on to college after her junior year. She had met all the college entrance requirements but could not afford to enroll without financial assistance. The dilemma was that scholarship assistance was predicated on a high school diploma and the diploma could not be granted until she had completed one more year of high school.

Throughout the interviews, although Commission members and state department staff talked about the state as a whole, the message was clear that what applies in some school districts does not necessarily apply in others. There was a great deal of diversity across the state. "If there was anything I came away with it was a realization of the great diversity of the state, for better or worse. Certain school districts have to cope with a hell of a lot less resources than others," commented one of the people we interviewed.

These interviews and our review of the documents show that the Commission and the state department had explicit intentions in establishing the new high school graduation requirements. These focused primarily on raising standards for students. More specifically, the purpose of the Certificate of Merit was to encourage more academic rigor and install a vehicle for recognizing students who earned it. The intent of the practical arts credit remains unclear, as its inclusion in the policy was embedded in larger political issues having to do with the survival of specific content areas. The fine arts requirement was aimed at increasing students' exposure to fine arts and to give them hands-on experience with it. The specification that four credits be earned in students' senior year was aimed at offering a more challenging and fuller program of studies during the last year of high school.

School-Level Perceptions of Policy Effects

In order to determine whether these policy intents are being realized, in 1988 and 1990 we interviewed teachers, counselors, administrators, and students in each of the five schools. These interviews lasted between 15 minutes and half an hour each, and were based on open-ended questions about what interviewees knew about the graduation requirements and the Certificate of Merit, and their effects. Overall, respondents talked about improvements in student outcomes as a result of the requirements. The improvements they described are organized around four themes: higher standards, increased exposure to curriculum, students receiving a more well-rounded education, and students planning their course selections more carefully. Each is discussed in more detail below.

1. Raised Standards

The primary benefits of the new policy, according to teachers, counselors, and administrators were higher standards for students and higher expectations of them. Both these benefits were part of the Commission's intent in revising the requirements. Specially, the new requirements were to "raise the expectations of students and motivate them," and "help let students know that education is serious business, because, to a certain extent, they [policymakers] have raised the standards." As one teacher at Urban stated about the change in requirements, "I look at it as positive because if you leave it up to kids they will take the path of least resistance." A teacher at Fast Track reinforced this: "It is forcing students to use their time in a more meaningful way. There is not as much of an opportunity for them to put in their time and be dead wood. They are going to learn in spite of themselves."

Students confirmed this assessment. When asked if they had received an adequate academic education at their schools, and if the graduation requirements had contributed to this, higher standards reasserted themselves in a variety of ways:

> The requirements made me push myself further.
>
> If I didn't [have to take the requirements] I would have taken all electives. If English was not required for four years then people around here would be stupid.
>
> If it was not required, more people would take electives just to get them by.
>
> The requirements helped me learn things I probably wouldn't have - ceramics, arts and crafts. Even typing helped.
> If not [for the requirements] people would be taking seven periods of gym; they'd be playing around too much.

However, while standards were raised for most students, they were not necessarily raised for all of them. One respondent stated, "If kids could graduate with one subject failed, they'd fail. Now we've raised the level, and they are working up to it. But the kids who were going down the tubes are still going down the tubes." The new requirements were advantageous only for certain sub-groups of students, such as "the 25 percent of the students at the top," "the 18 percent going on to college," and the "college-type kids." For other groups of students, the requirements were perceived as detrimental. As one United Nations teacher stated, "I approve of the new requirements but they have had a negative effect on low SES/broken-family students where more pressure brings lower motivation." And one school administrator stated, "In the area of student activity and performance, the jury is still out. Some kids haven't made the adjustment well to higher expectations."

While most teachers, counselors, and administrators agreed that students were better off as a result of the requirements, most also thought the requirements did not go far enough. Several respondents commented, "I'm all for it but it's not enough. There are more things needed. This is only a panacea," and, "We're on the right road to being better off. The country needs stricter requirements." Another stated, "I hope it doesn't stop where it is now. I can see realistic requirements in the future in computers, additional science, even a ninth grade citizenship component."

2. Increased Exposure to Curriculum

Educators consistently remarked that students were being exposed to a broader curriculum as a result of the new requirements. Mainly this was accomplished by "more kids signing up for classes they wouldn't have before," mostly in the areas of practical arts and fine arts. For instance, one technical education teacher stated, "Kids have been exposed to our program who wouldn't have taken it otherwise," and "Kids are able to explore areas, such as practical arts, that they might have avoided. The academic kids never made time for it; now they need it." Another teacher personalized the experience: "I wish someone had made fine arts and practical arts required for me. I'm sure I would never have set foot in some places if I was not forced to do it."

Increasing students' exposure to fine arts by making it a requirement was a particularly good idea because, "Music is a big curriculum that kids wouldn't take unless they had to," said one respondent. And one art teacher said, "If they [students] didn't have to take a fine arts course, I probably wouldn't ever see them in our classes." In short, teachers, administrators, and counselors supported the fine arts requirement because, as one of them said, "If we don't expose students to art in high school, I don't know where they are going to get it."

Students affirmed their increased exposure to new curriculum areas. Commenting on the impact of the requirements on their education, they remarked, "They forced me to take classes I needed; I learned that science is fun," and "The requirements made me take classes I didn't want to take, but I knew they would be best for me."

3. Students Receive More Well-Rounded Education

One effect of increased exposure to curriculum is that students receive a more well-rounded education. When teachers, counselors, and administrators were asked if they thought that students' awareness was more well-rounded as a result of the new graduation requirements, most agreed strongly that it was. Only administrators were divided on the issue. Respondents attributed this improvement to the new requirements in general, and fine arts in particular. Several educators commented that, "The graduation requirements have provided a little more rigor and better balance to the overall course of study," and "Kids in the end are better off if for no other reason than they are more well-rounded." Regarding fine arts they stated, "It will make students more well-rounded," and "I'm glad art is a requirement because kids need a broader background."

Students concurred. In response to the question about the adequacy of their education and the contribution the graduation requirements made to this, they perceived themselves as becoming more well-rounded and balanced:

> You're a little bit educated in every little thing when you leave here.
>
> They [the requirements] encouraged me to become more well-rounded because I have had to take a variety of courses. I couldn't narrow my options. It opened my mind to a lot of opportunities.
>
> It helps better suit you for society. Without them I would have taken all science; It made me more well-rounded.

Students did not become more well-rounded simply with the onset of a new policy, however. Each school had to reassess its organizational practices in order to integrate the new requirements effectively. At Fast Track, for instance, a seven-period day was implemented to make room for the new requirements in student schedules. One Fast Track teacher hailed the seven-period day as the key to "students taking more of a variety of courses." Without the extra period, it would have been difficult for students to take the extra courses needed in order to graduate. The seventh period "allows students to take more of a variety, to take fun courses, to explore themselves in a different manner." This teacher continued: "I saw algebra students on stage singing; it was wonderful to see that side of them."

But respondents also had some concerns and reservations about the requirements, particularly as to whether they had become perfunctory. They wondered if students were actually internalizing the additional content, or if they were just going through the motions and earning the credit. One teacher worried, "Students who do it [take a course] only for credit don't get anything out of it," and another reaffirmed the point saying, "[Students are] taking these classes because they have to, so they're just passing. They are not learning as much."

4. Students Planning Course Selections More Carefully

About half (55 percent) of the teachers and counselors we interviewed believed that students had become more careful planners as a result of the new policy. There was little consensus among administrators about whether this was so or not. Taking obvious pride in the centrality of their own role, guidance counselors attributed most of students' increased planning to their own work. For example:

> We counselors are more planful. It may be a detriment to kids because we are forcing them to get the basics out of way first.
>
> We've done some things - we start preplanning by having the counselor sit with them and plan out four years. Then they plan the next year. They used to say they'll sign up for anything and change it in the fall; we don't allow that anymore.

Several of the schools reportedly changed the guidance strategies used to help students plan, but there were instances where guidance counselors were accused of doing the planning for students. Therefore, it wasn't always the case that students were necessarily becoming better planners. It may have been that they were becoming more planned for. One interviewee put it this way: "For a lot of students, guidance does it all for them."

This planning applied to parents as well, particularly at Fast Track. One teacher sought clarification to the question "Are students becoming more planful?" by asking "Students or their parents? Both seem to be." And, with reference to the Certificate of Merit, one Fast Track teacher stated, "Now when they [students] come into grade nine, many have their four-year schedule all worked out. When eighth grade parents come in, they have, along with students, everything figured out." Another teacher recounted how the parent of an eighth grader solicited the teacher's advice about course-taking for the student's senior year. He said, "My son has an opening his senior year -- what course in your department should he take?" Students also might become more cautious planners merely because of the increased requirements and the attendant need to be more careful about meeting them. With less freedom and leeway in selecting courses, they needed to plan their schedules more carefully.

Conclusion: In terms of raising standards and increasing the diversity of courses taken, students becoming more well-rounded and more planful, the policy has achieved its goals. This must be balanced against reports of students placed at-risk because of the new policy.

Recommendation 7.1: The state should work toward full implementation of the policy by exhibiting long-term commitment to the initiative, increasing training opportunities for their own staff as well as local staff, and adding support/encouragement to local districts as they experiment with new designs.

In conclusion, educators in Maryland view the graduation requirement policy as being beneficial to students for several reasons. First, they noted that the higher standards satisfied one major policy intent. Students said they were more challenged as a result of the new requirements, however not all students agreed. Several respondents suggested that the requirements were advantageous for those already succeeding and a hindrance to those who were not. And school-level personnel agreed that while the requirements were valuable in certain ways, they did not go far enough. These educators also said that students were getting exposure to curriculum areas they may otherwise have bypassed. In particular, they singled out the fine arts and practical arts. Students were also becoming more well-rounded, teachers and counselors maintained. Some schools reassessed various organizational practices, such as the number of periods in a day, in order to promote this process. There was general agreement that students were becoming more planful, largely attributed to revised guidance practices. In short, school-level educators and students perceived some positive changes, however none of these changes was overwhelmingly powerful.

Community Perceptions of Effects

Although the new graduation requirements policy were intended to raise standards, this intent was not linked to post-high school outcomes. That is, the policy did not specify what benefit higher standards would have for students once they graduated. The policy affected students in several different ways while they were still in school. We explore here perceptions about how the new policy will benefit students after high school.

Because students' next steps after high school are usually employment or college, we conducted a series of interviews with admissions representatives from community colleges, four-year colleges and universities, and employers in the vicinity of the five high schools in this study. Interview protocols covered the following areas: awareness of graduation requirements, courses taken by students, knowledge and importance of the Certificate of Merit, importance of courses taken, and any differences noted in cohorts of students prior to and after the implementation of the new graduation requirements (see Appendix C, interview protocols C-8, C-9, and C-10 for a complete description).

1. Colleges and Universities

The collection of data from institutions of higher education consisted of telephone interviews, ranging from 10 to 20 minutes in length, with admissions officials from 14 four-year colleges and universities and nine community colleges in the state of Maryland. These institutions were chosen according to the following criteria: rate of attendance by graduates of the five schools in the study, percentage of students who were Maryland residents, geographical representation, and school academic competitiveness. The foci of this data analysis were the extent and source of respondents' knowledge about the new graduation requirements and the impact and degree of importance respondents placed upon this new policy.

Knowledge and impact of requirements. We explored criteria that four-year colleges and universities use to admit students, because these indicate how important the types of courses a student takes actually are to the admissions process, whether in a particular curriculum area, such as fine arts, or in a certain academic level, such as Certificate of Merit or Honors. The vast majority of college and university representatives interviewed indicated that GPA and SAT scores far surpassed any other criterion for admission. The high school record is the first priority: "We figure out a GPA for each student only in academic subjects (i.e. foreign language, English, science, math, and social studies.)" "We are interested in whether the courses the student is taking are Certificate of Merit, Honors, or Gifted and Talented." The second priority in admission to college is performance on the Scholastic Aptitude Test (SAT), which is becoming increasingly important.

Because of the practice of calculating an "academic GPA," fine arts and practical arts courses are not even considered by a large majority of four-year colleges and universities. Most officials made a substantial distinction between math and fine and practical arts when talking about the impact of the new graduation requirements. The extra credit in math was looked upon much more favorably than the credits in fine and practical arts:

> The additional math credit helps because we look primarily at GPA and SAT scores. The fine arts and practical arts wouldn't really matter - we are looking for a well-rounded student so it wouldn't hurt, but our primary concern is the GPA, SAT, and core courses.
>
> The practical arts and fine arts don't matter because we never consider it. But the third year of math is important.
>
> The fine arts and practical arts unfortunately have no bearing. They aren't included in the academic GPA. But the math requirement has very much so impacted on the applicant pool. It has helped us with raising admissions standards. Now we have more qualified students applying.
>
> Students are more prepared in math, definitely in math. The other two - fine arts and practical arts - wouldn't matter. When we evaluate transcripts we only evaluate college prep courses so those courses (fine arts and practical arts) would be thrown out. They have no effect at all on any decisions we make.
>
> We were told that if a student is taking an arts class don't hold it against them because it is a new requirement.

Only two admissions counselors responded positively to the fine arts requirement. One was from a college that requires students to take a fine arts course in order to graduate, "So having one fine arts and one practical arts required in high school probably gets them more ready." The other said that fine arts and practical arts would "make students more well-rounded."

When asked if the new requirements had any impact on the school's applicant pool over the past two years, 80 percent of the four-year institutions' respondents said they saw no difference. For some schools, there were other factors that carried more weight than the new high school graduation requirements. For instance, six of the schools had recently entered the University of Maryland admissions system, which meant their own requirements had increased: Students were required to have three math credits (algebra I, algebra II, and geometry) in order to gain admittance into state colleges and universities. Therefore, admissions staff were unable to tell if a school's applicant pool had been impacted by the high school graduation requirements or by the college's own new admission requirements.

Over half of the admissions officials from community colleges stated that the graduation requirements had no impact on their applicant pool over the past two years. The remainder felt that their applicant pool had changed over the past few years, however, they could not directly attribute the change to the new requirements. One official said the increase in applicants was because of an increase in the excellence standards at that particular college. Another stated, "There has been an increase in those entering higher education over the past 12 years. This is due to an increase in socio-economic status [of the applicant pool]."

One-third of the four-year institution representatives stated that the new requirements did make a difference in areas such as entrance exam scores (the math section of the SAT) and students' "well-roundedness." This was most apparent in "less competitive institutions," where all three officials stated that the requirements helped prepare high school students for college. Another third of the four-year institution representatives stated that the requirements made "somewhat" of a difference. An extra math course couldn't hurt, they said, but the practical and fine arts courses did not matter.

About 30 percent of the four-year college and university representatives stated that the new requirements made no difference in student preparedness. Two of these officials represented schools with a "most competitive" ranking, and said they saw no difference because their applicants usually take these classes (particularly math) anyway; practical arts and fine arts were not an important consideration in their admissions decision. This differed for the community colleges, where none of the admissions representatives thought that students were better prepared academically as a result of the new graduation requirements.

It was sometimes difficult for these admissions representatives to comment on the impact of the new requirements simply because they did not know about them. Of the 14 four-year college and university officers, only two could list the new requirements specifically; five had no knowledge of them whatsoever. Seven were somewhat aware of these requirements. As one respondent stated, "The new requirements were brought up at a meeting but we weren't given anything in detail."

The community college respondents were much more aware of the requirements; eight knew what the graduation requirements in Maryland were, although none was unaware that they were new. Only one respondent did not know about the specifics of the requirements. Perhaps community colleges would be more aware of the requirements because minimum competencies are of greater importance in their admissions process.

Knowledge and impact of the Certificate of Merit. Nearly half of the four-year college and university representatives knew something about the Certificate of Merit. However, none knew its specifics. One respondent stated that "If students do well in high school, they have a strong GPA and SAT scores are good, they receive a certificate at the end of the year." Another respondent, revealing a lack of information about the Certificate of Merit, noted, "A student brought it up in the interview and I had never heard of it before. I wanted to put it in the category of honors or AP and she kept saying no, that's not what it is. I came back and asked the Dean of Admissions if he had heard about it. He had, but just in vague terms." Still another respondent thought students earned the Certificate of Merit for excellent or perfect attendance. Although all of these respondents stated that they knew what the Certificate of Merit was, they were vague as to the specifics. In actuality, none of the respondents were completely familiar with the Certificate of Merit.

Of the nine community college respondents, five had heard of the Certificate of Merit but they, too, were vague about specifics, referring to it as "an honors program for high school students" and a "new system whereby students can graduate by taking a certain number of advanced courses." Like their colleagues in four-year colleges, none of the community college respondents had detailed knowledge of the Certificate of Merit.

Respondents frequently attributed their lack of knowledge about the Certificate of Merit to the fact that it was not always marked on student transcripts. One admissions officer commented, "In certain counties the Certificate of Merit was listed right on the transcript, in others no. It doesn't make any difference in admissions decisions because we never knew what it was." Similarly, another college representative stated, "I can't tell [when looking at transcript]; if I could, we would try to take that into consideration." For community colleges, often the final transcript goes to the records department and is not even seen by the admissions representative. One community college representative said, "Many times the way the transcript is printed it is difficult to tell what level the student is in."

The majority of respondents from both four-year and community colleges who were somewhat familiar with the Certificate of Merit learned of it from other than the Maryland State Department of Education. Four officials heard about it from high school administrators (at meetings and through personal relationships). Another four became aware of it by processing transcripts. One stated, "I found out [about the Certificate of Merit] through processing the transcripts and asking what the Certificate of Merit designation was as it showed up on the transcript." Two officials became aware of it through high school profiles sent to the college, another two had been notified through their own childrens' schools, and one heard of it during an interview with a student.

Over three-fourths of the four-year college and university representatives said they did not consider the Certificate of Merit when admitting students. One respondent stated:

> We look at the level of coursework so the extent that the course has Certificate of Merit next to it is important. We make decisions on grades mostly up to 11th grade. In some cases we don't even see senior year grades when we admit a student. We don't see senior year transcripts until after they're here so the actual earning of a Certificate of Merit is not as important as the Certificate of Merit level of course.

And another similarly said, "We expect all students to follow a college prep course of study anyway and that's what the Certificate of Merit would encompass." Those respondents who did consider the Certificate of Merit (one-fifth) stressed that it would be viewed as any other honors program. Thus, the Certificate of Merit is important only insofar as it signals a particular level of coursework; the actual attainment of the certificate itself is not important: "While it's not the same level of consideration (as some other honors programs), we do consider it. It comes in the middle area of our consideration -- it's not the most or least important but it does make a difference."

At the four-year institutions that interview students, all of the officials stated that they personally do not bring up the Certificate of Merit in interviews with students, and three-quarters of the officials reported that neither do students. Three-fourths reported that the Certificate of Merit never gets mentioned in letters of recommendation; when it does, it is usually the guidance counselor who mentions it.

The admissions procedure across community colleges in the sample is similar. Admission is open to all students. A personal interview is not a requirement or criterion for admission, but a face-to-face meeting is used as an information or advising session, usually to discuss student placement. Again, the Certificate of Merit was never brought up in interviews, either by admissions officers or by students. All students who enroll are required to take a placement test and fill out an application. All the admissions officials stated that evidence of the Certificate of Merit is not located anywhere on the application, and those respondents who did look at transcripts stated that the Certificate of Merit was never indicated, or they were not aware that it was indicated, anywhere on the transcript.

When asked if they noticed a difference between those students who earn a Certificate of Merit and those who don't, the majority of community college respondents could not answer this question because they had not, to their knowledge, dealt with Certificate of Merit students. This may be because, as one respondent stated, "Those students who get Certificates of Merit do not come to community college but go onto four-year colleges. Certificate of Merit students are better prepared for college, but we see very few of these students." Those who did offer an answer were speculative, stating that a Certificate of Merit probably indicated a more rigorous course of study and therefore a better student.

Several officials from four-year colleges and universities mentioned that the Certificate of Merit was difficult to consider because of the timing of admissions decisions. Admissions decisions are often made early in the spring, while Certificate of Merit eligibility is not determined until just a few days before graduation. One university representative stated that he "likes students to have everything in by March 1. By the time they have the Certificate of Merit, most admissions decisions are pretty much done. Only a few people are waiting to hear about admission by the time they graduate from high school."

Generally, for the community colleges interviewed, the Certificate of Merit did not come into play at any time during the admissions process. It is not used as an admissions criterion, since all Maryland community colleges have open admissions. A few of the respondents stated that a Certificate of Merit could help a student if he or she were applying for a scholarship or trying to get into a specific program (e.g. nursing). However, none of the respondents had, in their experience, ever processed a student who had earned a Certificate of Merit. One community college representative stated, "It's not the type of thing we look for. It's not a criterion we'll go out of the way to look for. If we get a student who is good, we know. We won't hunt for the Certificate of Merit."

Overall, these interviews suggest that the effects of the graduation requirements and the Certificate of Merit on college admissions have been minimal at best. Almost 90 percent of the admissions officials from four-year colleges and universities in the study had minimal or no knowledge of the new requirements. Although some officials stated that the extra academic course (math) couldn't hurt, no one seemed too impressed or concerned with the practical or fine arts requirements and most stated that these courses had no effect on admissions decisions.

None of the representatives from four-year institutions had a clear idea of what the Certificate of Merit entailed and what purpose it served. Colleges that actually came across the Certificate of Merit in the admissions process viewed it as they would any honors program, suggesting that the Certificate of Merit has not had any noticeable effect either way on the college admissions process.

The new graduation requirements and the Certificate of Merit have had very little impact at the community college level as well. This is more true about the Certificate of Merit, however. Community college administrators seem ill-informed as to what the Certificate of Merit actually is and how it could be used in admissions and placement processes.

While less competitive colleges and universities stated that their applicants seemed to be better prepared academically, respondents from community colleges (which would be categorized as less competitive as well) did not notice that to be true on the whole. According to one official, although her particular college is admitting more students who have taken advanced placement courses, it is also admitting more students with academic deficiencies. Also, any changes in applicant pools and student success cannot be attributed to the new requirements alone, but to a combination of other outside factors, such as a rise in socioeconomic status in some counties, the "fine tuning" of remedial programs, and the raising of standards in many community colleges. Therefore, it is safe to say that if there are students who seem more academically prepared for community college than before, it is not necessarily due to the new high school graduation requirements.

2. Employers

We also interviewed 13 employers who were located in the general vicinity of the five high schools. Interviews were conducted by telephone, lasted 10 to 20 minutes, with interviewees chosen for their proximity to the schools, their employment of graduates of the high school under study, and the type of industry (health, manufacturing, government, restaurant, hotel, security, and publishing). Interviews were open-ended but followed a general outline, focusing on qualities employers look for when hiring, their use of high school transcripts, their knowledge of graduation requirements and the Certificate of Merit, and the impact of these on the hiring process.

Employers most often mentioned work experience as being the primary criterion they use to make hiring decisions. Five of them mentioned dress or appearance, presentation or way of talking was discussed by four employers, and prior skills and high school diploma by only two. The criterion mentioned varied by the type of job and the skill level. The two respondents who mentioned skills and one who mentioned types of courses were all hiring employees for technical work in government and manufacturing.

When asked directly if the type of courses prospective employees had taken mattered, equal numbers of employers replied that it did and did not matter, or that it depended on the situation. Employers who judged student course-taking important were hiring for positions that required technical expertise, such as computer operators or secretaries. Overall, employers were interested in the relevance of particular courses to the positions for which they were hiring; little importance was placed on the well-rounded student. Employers made the following comments illustrating the type of courses needed for specialized work within their industry:

> [When hiring security guards] it's good if they are specializing in security-type courses i.e. communications, criminal justice. If they are looking for a job in machining, they should have taken a machines class, and business courses are preferred for office workers.
>
> To be placed in certain jobs they must have had certain classes i.e., to be a computer aide they must have at least one computer course; same for accounting aide; for clerical work they should be in the office technology program and have typing."
>
> For engineer aides at the GS2 level we look for different courses, not like general business but science, algebra, trigonometry - Certificate of Merit courses I believe they now call them.

Other employers reiterated that it wasn't the course that was important, but the skill that the student was able to obtain. If students learned a skill outside of the classroom, it did not matter, as long as the skill level was appropriate for the job. For instance, one respondent stated, "If they [the potential employees] have no work experience, what they took at school is important, what classes. Just the skill is important, not the course title, weight, or level." The lack of importance that course-taking has, or even that the earning of a high school diploma has, and the importance placed upon skill, is reflected by one employer's statement:

> We prefer experience -- they don't need a high school diploma. Welders and machinists usually do have a diploma but they may have been trained at ARCO -- trained but not necessarily in a high school setting. The same goes for clerical work -- they don't need a diploma, just the skills needed for the job.

However, this varied by the type of job and industry. The restaurant industry, unlike manufacturing, publishing, and government, can not afford to be too particular about the skills of the people it hires. As one restaurant owner stated:

> We are in a tight job market right now. In hiring employees we do something called a pulse test -- if they have one pulse a minute they're hired. I have five waitresses right now; five years ago I wouldn't have considered any of them.

Ten of the 13 employers interviewed said they do not look at potential employees' high school transcripts when making hiring decisions. The three employers who did look at transcripts said they looked at grades or overall GPA. But, generally, there was a lack of interest in grades. As one employer stated, "Grades are the least of our concern, given the number of other factors that are looked at, such as the aptitude test." And another, who offers a training program to all new employees, said, "Grades not important, as long as they have the desire to learn." Even the one employer who conceded that certain grades are important does not consider them because it was too time consuming to do so.

Only two of the respondents had any knowledge of high school graduation requirements, new or old. One who did was a parent of a student at Fast Track High School, another a work study coordinator at Middle Class High School. However, these were exceptions. Only one employer noticed any differences in students who had graduated since the new graduation requirements were put into effect. Students, she said, had better word processing and computers skills, but she wasn't sure if they learned them at home or at school. Her comment makes the effects of the increased practical arts requirement difficult to determine, but indicates they may be negligible at best.

When told about the new requirements, most employers reacted favorably to the change and felt it was a good idea. One employer responded typically when he stated, "The more credits needed to graduate the better. There will be a smarter pool of people to choose from." Several respondents were selective about which credits should be increased. For instance, one employer stated:

> It depends on the job they're looking for. Vocational courses are important to us -- we recruit from vocational schools. Practical arts is good because certain jobs require that (i.e. computer jobs). For computer operators, a third year of math would be attractive as well.

Only a few employers expressed ambivalence, such as one employer did when he stated, "As long as the school has indicated they are in good standing and will graduate, it really won't matter. I'm just concerned that they will graduate -- what they need to graduate doesn't matter to us -- just that they graduate."

Eight of the employers interviewed had never heard of the Certificate of Merit, while three had heard of it, and two weren't sure. The three employers who had heard of the Certificate of Merit easily attributed their knowledge to the fact that they had children in high school. An employer who was also the parent of a student attending Fast Track High School stated, "When my daughter just started ninth grade, we took her into school the first day for her registration, and all we heard was Certificate of Merit this and Certificate of Merit that. The Certificate of Merit is the academic courses." None of these employers had any specific knowledge about the Certificate of Merit, however.

After telling employers precisely what the Certificate of Merit entailed, we asked if it would make a difference in their hiring of a student. Seven agreed that it would be an advantage, calling it "a good recommendation," "important because it reveals high motivation and excelling," signifies a "more career-minded student," and "it shows that the person has potential, drive, and wasn't a screw-up in school, which could reflect upon his work." Many employers figured they would not receive information about the Certificate of Merit because students earned it after interviewing for a job. For instance, said one employer, "I've never had a student mention it because we interview them in October of their junior year." Similarly, another respondent noted, "It will be too late; they will already be hired before we know if they are getting it [the Certificate of Merit]. They get security clearance by February, and we don't know about the Certificate of Merit until June." One employer said the application form hinders mention of the Certificate of Merit:

> The student is more likely to get hired [if s/he has a Certificate of Merit], but s/he has to show that on the application. I've never come across an application with Certificate of Merit on it. There is an awards section, in which they could say if they took honors courses. But they don't put Certificate of Merit in the awards section, which surprises me because I know what it stands for.

Overall, only a few respondents mentioned the types of courses potential employees took and their skill levels as being important hiring criteria. When asked specifically if these were important, some respondents said that they were, although importance varied by type of job. The more specialized the job, the more certain skills (therefore certain courses) became valuable to employers. Typically, employers looking to fill computer, clerical, and some mechanical jobs, placed more emphasis on high school courses and student skills than did others. This lends support to the value of the practical arts requirement. Students who take computer or vocationally oriented courses, are more likely to be at an advantage in obtaining employment should that be their post-high school choice. However, students looking for highly technical positions upon high school graduation would most likely have taken practical arts courses anyway, and would therefore be unaffected by the practical arts requirement.

Most employers agreed that, in principle, having a Certificate of Merit would be an advantage to students in the hiring process. However, in practice, they never hear about the Certificate of Merit. It is usually awarded after students have been hired, and the Certificate of Merit level course is seldom revealed, since high employers rarely look at school transcripts. Even if they do consult transcripts, seldom is the Certificate of Merit clearly indicated.

Conclusion: Local institutions of higher and post-secondary education and local employers were largely unaware of the new policy. Those who were aware of it reported that it didn't influence admissions or hiring practices.

Recommendation 7.2: The state should disseminate information regarding graduation requirements more systematically and thoroughly within the community college, college, and university systems, as well as to prospective employers of graduates.

Recommendation 7.3: The state should coordinate their standards for high school graduation with agencies responsible for admissions to post-secondary institutions.

Recommendation 7.4: The state should work more closely with the business community to educate them about the requirements, to develop report cards that are useful to employers, and to collaborate on curricula which will promote skills that enhance all students' future success.

Conclusions

The graduation requirements were aimed at raising standards for students. This was largely achieved, according to teachers, counselors, administrators, and students themselves. Positive effects of the new requirements include increasing students' exposure to particular curriculum helping them to become more well-rounded and more planful in their course selections. While these effects may have intrinsic benefits for students, they will probably not significantly benefit placement in college or employment directly upon graduation from high school. While the policy changes were regarded as beneficial and positive in high school their impact has not been particularly powerful outside that setting.

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CHAPTER 8:
IMPLICATIONS OF THE STUDY

This four-year investigation has documented the changes five Maryland high schools made in response to the reform of high school graduation requirements. Stricter graduation requirements, part of the "first wave" of 1980s educational reform, resulted in, at least in some states, greater attention to math, science, foreign language, and world history, with a concomitant lessening of attention to vocational education and electives (Kirst, 1988). This movement was strongest in California, where minimal requirements were replaced with considerably more stringent ones, despite a great deal of tension between advocates of local control and the state with its "incentives approach" (Timar and Kirp, 1988) to reform. While Maryland experienced this same kind of reform, it was not as dramatic as in California, partly because Maryland's standards were high to begin with and partly because the change demanded by the new requirements was incrementally small.

What do the changes reported here mean? How do we fit them into an on-going discourse about educational reform that is a different discourse than that which took place in the early 1980s? And, what lessons are valuable to those individuals charged with implementing educational reform in this new decade?

Educational Reform in the 1990s

Concern about inequities in access to educational resources shares center stage with persistent concern about excellence and high standards. While many individuals couch the debate as either/or (we can have equity or we can have excellence, but we can't have both), others take the stance that we cannot have excellence without equity. Much of this debate plays out in discussions about school restructuring, the currently most visible and least clearly defined reform initiative. While this definitional ambiguity is frustrating for researchers and practitioners alike, it is nevertheless useful as a "rallying point for reformers" (Elmore, 1990: 4).

At least four definitions of restructuring exist in the literature, emerging in roughly the following order. These definitions focus on governance structures, efforts to professionalize teachers, accountability, and profound alterations in how we organize children for learning at the classroom level. Each definition of restructuring has moved successively closer to the "technical core" of the educational enterprise -- where interactions between teacher and student, and student and student, take place.

Restructuring was originally defined as "redesigning governance structures (the formal arrangement for making and administering public policy on education)" (Swanson, 1989: 268) to include more key actors in important educational decisionmaking. Early definitions focused on devolving decisionmaking authority and creating more participatory structures. Reformers called for new structures that would bring parents, teachers, community members, and local administrators into important decisions. Today's reform discourse refers to this aspect of restructuring as school-based management. In school-based management, authority for decisions rests with a team at the local school level rather than with the district office or the state.

A second emphasis in the restructuring movement has been a press to professionalize teaching (one might well call this an effort to re-professionalize teaching); to develop in teachers the knowledge and skills they need to enact their new roles in educational governance. Darling-Hammond (1990) pushes these ideas further, demanding that the entire educational bureaucracy be restructured to foster greater investment in human capital -- primarily teachers but also school administrators -- responsible for educational services. She notes that:

> Unless major reallocations of resources and authority are made from regulatory offices to schools and classrooms, we cannot expect schools to find either the financial means of the organizational momentum needed to make significant changes. School restructuring not only needs to decentralize decisionmaking, so that parents, students, teachers, and administrators have a greater voice; it also needs to decentralize resources, so that investments can be made where they are needed. (Darling-Hammond, 1990: 294)

Increased accountability has been a third focus of the restructuring movement. While accountability in education has been around for a long time, linking it to system improvement is new. As McDonnell (1989) commented, the link was tightened when the National Governor's Association (1986) suggested an "old-fashioned horse trade," where state governments would loosen their reins on schools and school districts in exchange for local educators producing better student results. While it is widely acknowledged that accountability systems are powerful levers for changing local behavior, there is widespread concern about the appropriateness of the measures being used to achieve results (Corbett & Wilson, 1991). For accountability to be an effective component of restructuring requires more attention to both the quality and range of indicators included in the assessments.

The final focus of restructuring is on ways to bring children together for learning more equitably in classrooms and schools. The structures of tracking and ability grouping and the perverse effects they have on at-risk learning have been an important theme in educational reform. Reformers have called tracking and ability grouping discriminatory in their allocative function and unjustifiable in a democratic society. Recently, concerns about the inequities of tracking and ability grouping have been brought into the discussion about children with special needs and other at-risk children and youth.

The federal government's policy to more fully integrate children with special needs into regular classrooms (the Regular Education Initiative, or REI) stands as a hallmark of this aspect of the restructuring movement.

first articulated in the mid-1980s. Driven by both finance and equity concerns, REI has fostered state-initiated local experiments that place all types of children in the classroom. This initiative has the potential to profoundly change how we bring children together for learning. The implications for curriculum, pedagogy, school culture, and the purposes of education, as well as for the roles of teachers and administrators, are enormous.

In fact, all four aspects of the restructuring movement work in concert to alter formal decisionmaking structures, the knowledge and skills of professionals in schools, accountability at the local community and state, and the structure of learning environments. This "transformation" (Elmore, 1990) of the schools, however, must be grounded in a vision, a sense of purpose for American schools very different from that of the past. The vague and ambiguous, multiple and conflicting purposes of the American high school have led to schools that increasingly serve well only a small minority of students. Restructuring offers a powerful avenue to rethink high schools' purposes and aims.

But what are the implications of this discourse of the 1990s for reform initiated in the early 1980s? How can we place the findings of this four-year study into that context? One useful way is to identify challenges confronting key educational actors as we begin the decade of the 1990s. These challenges or issues, articulated below, are based on the previous seven chapters of this report. They do not flow directly from specific findings or recommendations; they are, rather, a discussion of the implications of Maryland's on-going educational reform effort. That is, we move beyond the data to speculate about the challenges involved in making all youth more successful learners and more productive citizens of the Twenty-First Century.

Challenges for Education in the 1990s

Challenges facing the nation and the 50 states -- the latter becoming increasingly important actors in the delivery of human services and education -- center on the changing composition of the U.S. population over the next several decades. Made up of growing numbers of minority students, children born and raised in poverty, and those whose native language is not English, school populations and ultimately the workforce are becoming significantly more diverse. The evidence is strong that schools and schooling systems do not serve these children well (Darling-Hammond, 1990). The "large and persistent achievement gaps" (Cohen, 1990: 256) between whites and minorities, between the affluent and the poor, and between those whose native language is English and those whose primary language is another demand profound changes in the way we serve those persistently excluded from educational resources. Clearly, restructuring schools has the potential to alter those patterns.

1. The Challenges for Schools

Schools carry enormous responsibility to affect change. They are sites for the delivery of educational services and the places where the state requires students to come for a minimum of 12 years. We see six major restructuring challenges emanating from this research: (1) reorganizing how students are brought together to learn; (2) building flexible time schedules; (3) altering the role of the counselor; (4) infusing the curriculum, especially remedial or general courses, with challenges to higher-order thinking and problem-solving skills; (5) increasing the comprehensiveness and diversity of data bases to inform decisionmaking; and (6) enhancing communication structures within districts and between schools. These six challenges must become part of a more complex restructuring agenda. They do not in and of themselves constitute restructuring.

The perverse effects of tracking in high schools have been well documented. As the demographics of the school-age population shift, those whom schools historically fail -- students at risk -- will become increasingly the students schools will be called upon to serve. As a society we cannot "continue to write off this segment of the population; the future well-being of this country depends fundamentally upon their educational success" (Cohen, 1990: 257). The challenge for local schools is to restructure student grouping arrangements and make them more flexible, to create environments where students learn from one another in teams, where the teacher is not the only person who claims knowledge, and where at-risk students can become active participants in learning. Altering learning structures to better serve all students, but especially those poorly served in the past, seems imperative.

Time is a powerful structure within schools. Time determines the pacing and content of learning over the day and the year, students' progression from one learning experience to another, social interactions outside of the classroom, and even the language used to communicate within a school building. As such, time profoundly influences students' educational experiences. How often do we hear of a student being denied access "because of the schedule?" The challenge facing local schools is using time to better meet important educational purposes rather than to constrain goals and expectations. Building flexible temporal organizations where students can engage in a subject for long periods, and where creative scheduling and groupings foster engagement and problem-solving, would be an immeasurable contribution to student learning.

The role of the counselor is related to school organization and the use of time. School counselors have the potential to deeply influence students' expectations, hopes, and beliefs about themselves. The challenge for schools is to redefine counselors' work so that they have more time to work with students. Counselors should help students, either individually or in small groups, understand their options in successfully navigating through high school, coach and cajole them into fully engaging in available learning opportunities, and negotiate with teachers and administrators on students' behalf when appropriate. Although counselors claim modest influence over students, we believe they have enormous potential to serve all students better, and at-risk students particularly.

Another challenge for schools is to infuse the curriculum with rigorous, thought-provoking inquiry into the topic at hand. While enriched curricula and instruction for a few students at the top may have sufficed for an earlier manufacturing society, today's technologically based information society requires everyone in the labor market to have complex skills (Darling-Hammond, 1990). Thus, human resource development, as influenced by high school curricula and instructional practices, weighs even heavier on educators. This is especially crucial in remedial, general, or "lower-track" courses, which tend to suffer from impoverished curricula and pedagogical practices. Since at-risk students are disproportionately found in those classes, the twin demands are to regroup them into more diverse classes and to ensure that they are exposed to a curriculum that will engage them in the learning process. Altering teaching strategies, ensuring a challenging curriculum, and bringing diverse students together may well create "opportunities for all students to become meaningfully engaged in reasonably complex and demanding learning tasks and gain practice working cooperatively with others" (Cohen, 1990: 261).

Another challenge for schools is to create and maintain useful, comprehensive sources of information -- data bases -- about their own practices. If the goals of restructuring and the devolution of authority to the school building are to be fully realized, schools must become their own best sources of information. They will need to monitor practices, spot trends that are divergent from their goals, clarify the impact of initiatives, and so on. To build and use complex sources of information is a challenge, but one that needs meeting if schools are to assume responsibility and accountability for their own operations.

This is particularly true in the current climate of criticism about the performance of our educational systems. Schools are struggling to balance the demands for restructuring and increased accountability. If they rely on traditional measures (e.g. test scores), they will fail to capture the complexity of the structural changes that need to take place. By adopting a more comprehensive information system, schools and districts will be in a better position to communicate what they are doing and the progress they are making.

The final challenge is to create better communication channels within schools (from teacher to teacher), within districts (from school to school), and across districts (from system to system). Education is a complex organizational enterprise that requires the integration of many different components. An optimal communication system provides organizational members with the tools necessary to do their work (Hall, 1982). This is particularly true when significant changes are taking place. Schools are generally regarded as isolating environments with little opportunity to discuss one's work and learn from others (Dreeben, 1973). The challenge is to create formal and informal channels that encourage timely, full, and open flow of information.

While these six challenges do not encompass all the challenges facing schools and school districts in the 1990s, they do represent the conclusions of our investigation. Children at risk are certain to be underserved by schools if current structures and practices continue. Strategies to better meet these students' needs should touch curriculum, instructional practices, grouping for learning, the use of time, and the use of staff. Up-to-date data bases and open communication among all participants are also needed to support these efforts.

The challenges to the state are to clarify its role as authority devolves to the local district, to clarify educational goals, and to develop a more complex mix of strategies to encourage educational reform. These are discussed next.

2. The Challenges for the State

The primary challenge for the state is to devise ways to encourage and support local districts as they restructure. To accomplish this, states can: (1) articulate a broad vision for its educational systems; (2) ensure a redistribution of state funds so that investment is increasingly in human capital that serves children directly; (3) devise mechanisms for policy implementation so that creative and flexible time schedules, learning environments, and teaching strategies can be tried; (4) build greater capacity to assist districts in timely and comprehensive information systems; and (5) build communication structures that ensure the accurate and thorough flow of information between districts and the state.

A task for the State Board of Education is to formulate a clear vision that shapes education within the state. Historically, both national and state educational goals have been too broad to guide specific policy (Cohen, 1990). More effort is needed to articulate that vision to stakeholders and to ensure that a consistent course is followed in carrying out that vision. Specific policies should emanate from that vision and define the arena for state activity. The policies should incorporate concerns for equity and the at-risk children who will increasingly comprise the school-age population. This direction, moreover, should help shape local districts' and schools' vision. Great latitude, however, should be granted local districts in framing their own vision, so that the opportunity to build site-based authority and responsibility for important decisionmaking will not be lost.

The achievement of locally generated goals (consistent with the state vision) will not be possible, however, unless the investment in human capital -- teachers -- increases dramatically. As Darling-Hammond (1990: 291) points out:

> The supply of qualified teachers, the nature of the preparation they receive, and the extent to which their talents are available to schoolchildren in different communities are the critical factors that will make or break education reform efforts across the country.

Reform will flounder if training, retraining, supporting, and revitalizing educators do not become state priorities. Such training, technical assistance, and support must also move beyond the individual. Schools are an important unit of change. It is essential to build capacity in them to do creative problem solving, plan, implement, and sustain change. Support means more than assistance. The state can also play an important "cheerleading" role. After capacity has been developed, it is important to acknowledge and reward that effort. More aggressive promotion of successful programs and practices needs to take place. Educators are most receptive of innovations initiated by their peers. The state might well play a more active role in identifying successful role models and in disseminating them widely.

Another role of the state in the 1990s will be to develop and implement policies that will foster achievement of the broad educational vision while encouraging local districts and schools to experiment and create their own visions and goals. In so doing, the state may find it valuable to build long-term internal commitment to holistic policy initiatives such as restructuring. Such commitment signals the seriousness of the effort to local districts and builds internal expertise in training and technical assistance.

Several mechanisms are available to the state to foster policy implementation: mandates, inducements, capacity-building, and system-changing (McDonnell & Elmore, 1987). Policies developed in the first wave of reform typically were enforced through mandates and accountability measures. Thus, they carried the weight of legislation and were "intended to produce compliance" (McDonnell & Elmore, 1987:134). With mandates there is at least an implied threat of legal sanctions should the agency not comply. Mandates are the "stick" of the "carrot or stick" style of motivation.

The other mechanisms -- incentives, capacity-building, and system-changing -- are more complex and typically take longer to implement and to produce results. Because of their complexity, they foster a wide range of responses, encourage experimentation and innovation at the local level, and, in the case of system-changing, provide legitimate areas in which to experiment with restructuring. In sum, the choice of policy instrument or mechanism to implement policy has a profound influence on whether there will be a sense of shared responsibility between state and local actors or whether that relationship will be one of oversight and authority (Firestone & Rossman, 1986).

Fostering experimentation and innovation at the local level has long been a concern of state policymakers. Much of the success of any new initiative, however, rests in understanding variation in local capacity and will. Our research clearly shows the influence of local capacity, organizational constraints and resources, and the culture of the local school and district on the implementation of state initiatives. Success in the future will not occur simply because mandates evoke compliance (Cohen, 1990), but rather because a complex mix of strategies shape district and school cultures in creative and innovative ways. Such strategies, if they are effective, will restructure relationships among those who have decisionmaking authority, and foster equity for at-risk students while maintaining high expectations for everyone's learning. As the five schools in this study showed, mandates seldom take local context into consideration. A mixture of strategies is more useful for addressing local contextual conditions and meeting the state's aims.

Devising multiple implementation strategies signals a fundamental shift in the state's authority relations and the way it defines local accountability. The state is moving away from a regulatory role and local districts are becoming self-regulatory. Not only is it asking districts to transform themselves, but also it is transforming itself.

The state also needs to help local districts and schools construct and actively use comprehensive and efficient information systems. The state has already acknowledged this need with its implementation of the School Performance Program (Maryland State Department of Education, 1990). Through the use of well-designed data bases, districts have the potential to become their own best "monitors." They can take the pulse of learning within the district and adjust practice to ensure progress is being made towards their vision and goals. However, comprehensive information systems are more than internal barometers. They also offer educators and policymakers the opportunity to communicate more effectively with the outside world about what schools are trying to accomplish. Current testing tools distort the larger purpose and may even get in the way of significant reform (Corbett & Wilson, 1991). Broadly based, well-conceptualized information systems offer legitimacy and increased accountability to policymakers and the public.

A final challenge for the state is to articulate more fully and openly with all key elements in the educational system. This includes other state agencies that provide services for children and families, state-level associations, and local districts. It is also important to ensure full communication with institutions of higher education and employers in designing a vision and set of goals for high schools. Often these agencies and institutions work in ignorance of one another or at cross purposes. To ensure close articulation between the secondary educational system and post-secondary systems or the workplace, regular, timely, and open communication is necessary.

A Final Word

This investigation clearly took us beyond narrow counts of courses to more complex issues of equity, curriculum and pedagogical practices, and relations of authority within schools, between schools and districts, and between schools, districts, and the state. Our broad brush also touched on the complex processes of reconceptualizing school reform and the state's role in framing and encouraging experimentation and innovation at the local level.

The study began with five questions about the reform of high school graduation requirements: What is the variation in implementation by school and how can we account for that? How are tracks and tracking systems affected? What is happening to students and teachers at risk? How is influence played out in the policy arena? And, what was the intent of the policy and has it been realized? Answers to these questions are complex and multi-faceted. Schools are complex organizations where reform of one aspect reverberates throughout. We end our discussion with a call for the state to move away from the mandated change of the first wave of reform and to move toward a strategy of capacity-building and system-changing that makes the state and local districts and schools partners in experimentation and innovation. In such a model, the state's role would be no less crucial than it is in a top-down, mandate model; in fact, its role becomes even more crucial. The state would provide resources, would train and offer technical assistance, encourage and facilitate innovation at the local level, and lead the way to restructured schools. In short, the state would lead the way in meeting the challenges facing all our students in the Twenty-First Century.

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APPENDIX A

MARYLAND STATE BOARD OF EDUCATION
HIGH SCHOOL GRADUATION BYLAW

STATE BOARD OF EDUCATION

Subtitle 03 GENERAL INSTRUCTIONAL PROGRAMS

Chapter 02 Graduation Requirements for Public High Schools in Maryland

Authority: Education Article, §§2-205(h) and 7-204,
Annotated Code of Maryland

.01 The Mission of the Public High School.

A. The mission of the public high school is to challenge and help students to grow intellectually, personally, and socially. Graduates should be able and willing to take the appropriate first steps into their chosen field of work or study, to act responsibly as citizens, and to enjoy a productive life.

B. To guide the high schools of the State in fulfilling this mission and their students in meeting these goals, the following requirements in this chapter are established.

.02 Diplomas and Certificates.

A. The diploma awarded to students upon graduation from a Maryland public high school shall be:

(1) A State diploma; and

(2) In recognition of the fulfillment of the minimum enrollment, credit, and competency prerequisite requirements.

B. In addition to earning the Maryland High School Diploma, students who meet the requirements of Regulation .03C(3) shall be awarded the Maryland High School Certificate of Merit.

C. There shall be a State certificate for completion of a special education program named the Maryland High School Certificate. This certificate shall be awarded only to handicapped students who cannot meet the requirements for a diploma but who meet one of the following standards:

(1) The student is enrolled in an education program for at least 4 years beyond grade eight or its age equivalent, and is determined by an Admission Review and Dismissal Committee, with the agreement of the parents of the handicapped student, to have developed appropriate

skills for the individual to enter the world of work, act responsibly as a citizen, and enjoy a fulfilling life. World of work shall include but not be limited to:

(a) Gainful employment;

(b) Work activity centers;

(c) Sheltered workshops; and

(d) Supported employment.

(2) The student has been enrolled in an education program for 4 years beyond grade eight or its age equivalent and has reached age 21.

.03 Graduation Requirements.

The following general State standards govern requirements for graduation from Maryland public schools.

A. Enrollment Requirement. The student shall satisfactorily complete 4 years of approved study beyond the eighth grade. Refer to alternatives to 4-year enrollment in a public high school in §G.

B. Competency Prerequisites. A student shall demonstrate competencies in five areas of human activity. The following apply:

(1) The competencies for each of the five areas of human activity are listed in the State Board of Education approved Declared Competencies Index, which is incorporated by reference in COMAR 13A.03.01.03A;

(2) A student shall demonstrate competencies as follows:

(a) In Basic Skills, pass the Maryland Functional Reading Test, the Maryland Functional Mathematics Test, and the Maryland Functional Writing Test, in accordance with provisions of COMAR 13A.03.01.03C,

(b) In Citizenship, pass the Maryland Test of Citizenship Skills in accordance with provisions of COMAR 13A.03.01.03C,

(c) In Arts/Physical Education, participate in the approved program of the Arts/Physical Education in accordance with provisions of COMAR 13A.04.07,

(d) In World of Work, participate in the approved program of World of Work in accordance with provisions of COMAR 13A.04.10,

(e) In Survival Skills, participate in the approved program of Survival Skills in accordance with provisions of COMAR 13A.04.11.

C. Credit Requirements.

(1) To be awarded the Maryland High School Diploma a student shall have earned a minimum of 20 credits at the completion of grades 9 through 12. At least four of these credits shall be earned after the completion of grade 11.

(2) Specified Credits for Maryland High School Diploma. To be awarded the Maryland High School Diploma, a student shall earn the following specified core credits as part of the 20 credit requirement:

(a) English — four credits;

(b) Fine arts — one credit;

(c) Industrial arts/technology education, home economics, vocational education, or computer studies — one credit;

(d) Mathematics — three credits;

(e) Physical education — one credit;

(f) Science — two credits;

(g) Social studies — three credits (one credit shall be in United States History).

(3) Specified Credits for Maryland High School Certificate of Merit.

(a) To be awarded the Maryland High School Certificate of Merit along with the Maryland High School Diploma, a student shall meet the following requirements:

(i) Specified core credits;

(ii) Advanced courses;

(iii) Cumulative grade point average.

(b) A student shall earn the following specified core credits as part of the 20-credit requirement:

(i) English — four credits;

(ii) Fine arts — one credit;

(iii) Foreign language — one credit;

(iv) Industrial arts/technology education, home economics, vocational education, or computer studies — one credit;

(v) Mathematics — three credits;

(vi) Physical education — one credit;

(vii) Science — three credits;

(viii) Social studies—three credits (one credit shall be in United States History).

(c) At least 12 of the credits in the student's high school program shall be earned in advanced courses. Advanced courses shall be identified by each local school system and shall meet one or more of the following criteria:

(i) Student assignments and class activities shall require more application, analysis, synthesis, and evaluation than other courses with the same course title at the same grade level or other courses in the same subject area at the same grade level.

(ii) The course includes more content or the study of content in more depth than other courses with the same course title at the same grade level or other courses in the same subject area at the same grade level.

(iii) The course requires the study or application of mathematics concepts at the level of Algebra I or beyond. All mathematics courses shall meet this criterion.

(iv) The course is a foreign language course at Level II or beyond.

(d) Students shall obtain at least a 2.6 cumulative grade point average on a 4.0 scale for the high school years to earn the Maryland Certificate of Merit.

(4) Instruction in computer use shall be included in the curriculum of each appropriate subject area.

(5) Students shall receive appropriate instruction in study skills and such thinking skills as gathering, organizing, analyzing, synthesizing, and evaluating information.

(6) In addition to elective programs or courses in required subject areas, local school systems shall offer elective programs or courses, which shall be open to enrollment for all students in:

(a) Community service;

(b) Computer studies;

(c) Health;

(d) Home economics;

(e) Industrial arts/technology education;

(f) Vocational education.

(7) Each local school system shall provide, in each of the public high schools, opportunities for students to participate in structured learning opportunities in the community as part of the regular high school program.

D. Local Graduation Requirements.

(1) Each local school system, with the approval of the State Superintendent of Schools, may establish graduation requirements beyond the minimum requirements established by the State.

(2) A student who enters a school system in the 12th grade shall be granted a waiver from locally-established graduation requirements unless the student chooses to fulfill the requirements.

E. Unit of Credit Defined. A credit shall be defined as a minimum of 132 scheduled clock hours for all original credit courses.

F. Other Provisions for Earning Credit. In addition to earning credits during the regular school day and year, credits may be earned, at the discretion of the local school system, through various other programs. These programs are:

(1) Summer School.

(a) Each local school system may provide summer school programs as determined by the needs of students or for original or review credit. Original credit courses shall meet the aggregate time requirements specified for regular school year courses. Requirements for review credit shall be developed for individual students by the local school system after determining the student's proficiency in the subject.

(b) Credit may be given for acceptable summer study offered by approved public and nonpublic institutions in or outside of Maryland, provided the principal of the student's own school authorizes the study in advance.

(2) Evening School.

(a) Each local school system may provide evening school programs as an extension of the regular school day for original or review credits as determined by the needs of students. Requirements for those subjects being used by students for original high school diploma credit shall be the same as those required for subjects in the day school.

(b) Requirements for review credit shall be developed for individual students by the local school system after determining the student's proficiency in the subject.

(3) Correspondence Courses. With prior consent of the school principal, credit may be given for correspondence courses in subjects not available in the school system from correspondence schools whose programs and examinations have been approved by the Maryland State Department of Education. Consent should be given when, in the judgment of student, parents, guardians, and school personnel, the course is in the best interest of the student. If credit is to be applied toward minimum graduation requirements, the cost of correspondence courses shall be borne by the local board of education after successful completion of the course.

(4) Tutoring. Extenuating circumstances may necessitate the assistance of tutors for certain students. However, tutoring should be considered only after all the resources of the school system have been used fully and when it is felt definitely that the best interests of the students are being served. If tutoring is recommended by the school and approved by the school system for credit to be applied toward minimum graduation requirements, then the tutor, the program of study, and examination shall be financed by the local school system.

(5) Work Study Programs, Job Entry Training Programs, or Experience Outside the School. Work and experience outside the school are recognized as valid ways of learning. Time spent in these activities may be counted as a portion of the specified number of clock hours required for credit when identified as an integrated part of a planned program. For work or experience outside the school which is approved and supervised by the local school system, not more than nine elective credits toward meeting graduation requirements may be granted to a student.

(6) College Courses. With prior approval of the local superintendent or designee, credit toward high school graduation may be given for courses at accredited colleges. The cost of these courses shall be borne by the student.

G. Alternatives to 4-Year Enrollment in a Public High School. In recognition of the fact that 4-year enrollment in a public high school may not serve the best interests of some students, the following alternative should be made available:

(1) Early College Admission Program. A student may receive a Maryland High School Diploma through participation in the early college admission program, provided that:

(a) The student is accepted for early admission to an accredited college before high school graduation.

(b) A written request by the student and parent (guardian) is made to and approved by the local superintendent of schools, asking the waiver of the 4th year attendance requirement and certifying the early admission acceptance. The student's program for the first year of college shall be approved by the local superintendent of schools if this program is included toward the issuance of a high school diploma.

(c) At the conclusion of a full year of study, a written request for the high school diploma is submitted to the superintendent together with a transcript or letter from the college to the high school principal indicating that the student has successfully completed a year of college work.

(2) Early Admission to Approved Vocational, Technical, or Other Post-Secondary School. A student may receive a Maryland High School Diploma through participation in an early admission program of an approved vocational, technical, or post-secondary school provided that:

(a) The student is accepted for early admission by an approved vocational, technical, or post-secondary school before high school graduation.

(b) A written request by the student and parent (guardian) is made to and approved by the local superintendent of schools, asking the waiver of the 4th year requirement and certifying the early admission acceptance. The student's program for the first year shall be approved by the local superintendent of schools if the program is included toward the issuance of a high school diploma.

(c) At the conclusion of a full year of study, a written request for the high school diploma is submitted to the superintendent together with a transcript or letter from the vocational, technical, or post-secondary school to the high school principal indicating that the student has successfully completed a year of post-secondary work.

(3) General Educational Development Testing Program. A Maryland High School Diploma may be awarded for satisfactory performance on approved general educational development tests provided

that the student meets those requirements as defined in Education Article, §7-205, Annotated Code of Maryland.

(4) Maryland Adult External High School Diploma Program. A Maryland High School Diploma may be awarded for demonstrating competencies in general life skills and individual skills on applied performance tests provided that the student meets those requirements as defined in COMAR 13A.03.03.02 of the Maryland State Board of Education.

H. Alternatives for Structuring Programs.

(1) Each local school system shall be permitted to develop alternative ways for students to fulfill graduation requirements. Procedures for implementing these alternative programs leading to high school diplomas are as follows:

(a) Development and approval of a curricular plan which assures that the content of the specified courses is included and the standards for graduation are met. The plan shall contain a program description, performance requirements, and evaluation procedures.

(b) Submission of this plan to the State Superintendent of Schools for final approval.

(2) Each local school system may offer local certificate programs, in addition to the State diploma, as incentives for students to take courses beyond those specifically required by the State.

I. Transfer.

(1) Graduation Requirements.

(a) To receive a Maryland public high school diploma, a student shall be in attendance at a Maryland public high school one full semester immediately preceding graduation in addition to meeting the other diploma requirements.

(b) In cases where this requirement creates an undue hardship for a student transferring from an out-of-State school and wishing to receive a Maryland high school diploma, the local superintendent of schools may waive the one full semester attendance requirement.

(c) In cases where this requirement creates an undue hardship for a student transferring to an out-of-State school and wishing to receive a Maryland high school diploma, the local superintendent of schools may waive the one full semester attendance requirement.

(d) Exception shall be made for special education students in State-approved nonpublic programs.

(2) Students transferring from one Maryland public high school to another during the second semester of their senior year and meeting all requirements for graduation shall be given the option of graduating from either high school by agreement of the superintendent or the respective local superintendents when more than one local school system is involved.

(3) Transcript of Record from Nonaccredited School.

(a) The principal shall ascertain whether the school or schools previously attended by the student are accredited. If there is any doubt on this point, an official inquiry should be addressed to the state department of education in the state in which the school or schools are located. If the school or schools are approved by that state, credits may be allowed the student in the subjects which the student has completed successfully.

(b) A local superintendent of schools shall determine by an evaluation of a student whether credits earned at a nonaccredited high school will be accepted at the public high school to which the student transfers. This evaluation may include administration of standardized tests and examinations, the use of interviews, as well as the inspection of transcripts, report cards, and other documentation. The student shall be notified in writing of the reasons for any failure to transfer credits from nonaccredited schools.

.04 High School Year Defined.

Maryland public high schools shall be open for at least 180 school days and a minimum of 1,170 school hours during a 10-month period in each school year.

.05 Grading and Reporting.

A. Each local school system shall develop a written policy on grading and reporting. The policy shall include but not be limited to the following:

(1) The establishment of instructional objectives and standards of performance for each course;

(2) Factors to be used in determining grades;

(3) Reporting contacts between parent (guardian) and teacher.

B. Each local school system shall file its policies on grading and reporting with the State Superintendent of Schools.

.06 Effective Date.

Regulations .01 through .06 of this chapter apply to all students who will be entering grade nine for the first time in or after the 1985-86 school year except Regulation .02C which becomes effective for the 1985-86 school year.

.07 Graduation Requirements for Students who Entered Grade 9 Before the 1985-86 School Year.

The following general State standards govern requirements for graduation from Maryland public high schools for all students who entered grade 9 before the 1985-86 school year. Credits for graduation are earned in grades 9 through 12. However, it is possible for students to complete the requirements for graduation in less than 4 years or more than 4 years.

A. Enrollment Requirement. The student shall satisfactorily complete 4 years of approved study beyond the eighth grade. (Refer to Alternatives to Four-Year Enrollment for Exceptions.)

B. Competency Prerequisites.

(1) A student shall demonstrate minimum competencies in five areas of human activity.

(2) The minimum competencies for each of the five areas of human activity are listed in the State Board of Education approved Declared Competencies Index, which was previously incorporated by reference in COMAR 13A.04.10.01A.

(3) A student will demonstrate minimum competencies as follows:

(a) In Basic Skills, pass the Maryland Functional Reading Test, the Maryland Functional Mathematics Test, and the Maryland Writing Test, in accordance with provisions of COMAR 13A.03.01.04;

(b) In Citizenship, pass the Maryland Test of Citizenship Skills in accordance with provisions of COMAR 13A.03.01.04;

(c) In Arts/Physical Education, participate in the approved program of the Arts/Physical Education in accordance with provisions of COMAR 13A.04.07;

(d) In World of Work, participate in the approved program of World of Work in accordance with provisions of COMAR 13A.04.10;

(e) In Survival Skills, participate in the approved program of Survival Skills in accordance with provisions of COMAR 13A.04.11.

C. Credit Requirement.

(1) A student shall earn a minimum of 20 credits beyond the eighth grade. Eleven of these credits shall be in the first four areas specified below. A twelfth required credit will be in physical education if the local system elects to use the alternative to meet the State physical activity requirement described below. The additional eight or nine elective minimum units may be chosen from offerings in any curricular area:

(a) English language arts	4 credits;
(b) Social studies	3 credits (one shall be United States History and one shall deal with contemporary issues, including local, state, and national governments);
(c) Science	2 credits;
(d) Mathematics	2 credits;
(e) Physical activity program	1 credit or 2 years noncredit activity as set forth in §C(3), below.

(2) Basic proficiency levels in reading, writing skills, and practical mathematics, as established by reference to standards approved by the State Board of Education, will be expected of all students. Students entering the ninth grade with marked deficiencies in these areas shall include in their programs instructional activities designed to improve their skills in the identified areas of need.

(3) A physical activity program is required for all students. The local school system may provide for the fulfillment of this physical activity requirement by offering courses through which students acquire one credit of physical education or by having students participate for 2 years in noncredit physical activity programs developed, approved, supervised, and evaluated in accordance with guidelines established by the local school system. Noncredit activities may include participation in an individual interest activity or activities, such as swimming, jogging, cycling, dancing, weight training and gymnastics, varsity sports programs, intramural activities, or other planned, diversified, and personalized activities. In approved, noncredit in-school or out-of-school program participation, the minimum aggregate hours for the year should be computed on the basis of two periods per week. In instances when extenuating circumstances prevent meeting the physical activity requirement, local school

systems shall adjust the requirement to fit the unique needs of the student.

(4) Subject areas are listed below as a general guide for consideration in curricular programs and not as an all-inclusive list of possibilities. Specific and integrated learning experiences may be developed within and among these broad subject area listings. Since the same sequence of individual courses does not meet the needs of all students, every effort should be made to assist students to select learning experiences appropriate to their future objectives and academic needs and accomplishments:

(a) Business education:
  (i) Business machines;
  (ii) Office work experience;
  (iii) Principles of accounting and bookkeeping;
  (iv) Principles of business finance;
  (v) Salesmanship principles;
  (vi) Stenography, typewriting, and related experiences.

(b) English language arts:
  (i) Composition;
  (ii) Dramatic arts;
  (iii) Language skills;
  (iv) Linguistics;
  (v) Literature;
  (vi) Speech.

(c) Fine arts:
  (i) Art design;
  (ii) Art evaluation;
  (iii) Art history;
  (iv) Art theory;
  (v) Choral music;
  (vi) General music;
  (vii) Instrumental music;
  (viii) Specialized music.

(d) Foreign languages: classical languages.

(e) Modern foreign languages.

(f) Health education: individual, family, and community health.

(g) Mathematics:

- (i) Advanced mathematics;
- (ii) Algebras;
- (iii) Business mathematics;
- (iv) General mathematics;
- (v) Geometries;
- (vi) Special mathematics.

(h) Physical education:

- (i) Aquatics;
- (ii) Body dynamics;
- (iii) Dance and rhythm activities;
- (iv) Group games;
- (v) Individual and dual sports;
- (vi) Outdoor recreational activities;
- (vii) Team sports.

(i) Practical arts:

- (i) Crafts;
- (ii) Driver education;
- (iii) General industrial arts;
- (iv) Graphic arts;
- (v) Home arts;
- (vi) Materials and processes;
- (vii) Mechanical arts.

(j) Science:

- (i) Earth and space sciences;
- (ii) General science and integrated science;
- (iii) Life sciences;
- (iv) Physical sciences.

(k) Social studies:
  (i) Citizenship education;
  (ii) Consumer education;
  (iii) Contemporary issues;
  (iv) Ethnic studies;
  (v) Geography;
  (vi) Global education;
  (vii) History;
  (viii) Philosophy;
  (ix) Political science;
  (x) Psychology;
  (xi) Sociology.

(l) Vocational-technical education:
  (i) Agriculture;
  (ii) Distributive education;
  (iii) Health occupations education;
  (iv) Home economics;
  (v) Office occupations;
  (vi) Technical education;
  (vii) Trade and industrial occupations.

(5) The above requirements are recognized as minimum State standards and permit the required units of credit to be combinations of partial credit courses. A local school system may specify up to two additional credits within the total of 20 credits required for graduation. These additional requirements must be approved by the local board of education and must be on file with the State Department of Education.

(6) Unit of Credit Defined. Determination of a unit of credit is based on the satisfactory completion of course work and the number of hours of instruction scheduled by the school. The time requirements for earning units of credit are based on a school year of 36 weeks. However, these time requirements are applicable to various flexible school year organizations.

1 credit	132 clock hours
½ credit	66 clock hours
⅓ credit	44 clock hours
¼ credit	33 clock hours

(7) Provisions for Earning Credit. In addition to earning credits during the regular school day and year, credits may be earned through various other programs. These programs are:

(a) Summer School.

(i) Local school systems may provide summer school programs as determined by the needs of students or for original or review credit. Original credit courses shall meet the aggregate time requirements specified for regular school year courses. Requirements for review credit shall be developed for individual students by the local school system after determining the student's proficiency in the subject.

(ii) Credit may be given for acceptable summer work offered by approved public and nonpublic institutions in or outside of Maryland, provided the principal of the student's own school authorized the work in advance.

(b) Evening School. Local school systems may provide evening school programs as an extension of the regular school day for original or review credit as determined by the needs of students. Requirements for those subjects being used by students for original high school diploma credit shall be the same as those required for subjects in the day school. Requirements for review credit shall be developed for individual students by the local school system after determining the student's proficiency in the subject.

(c) Correspondence Courses. With prior consent of the school principal, credit may be given for correspondence courses in subjects not available in the school system from correspondence schools whose programs and examinations have been approved by the State Department of Education. Consent should be given when, in the judgment of student, parents, guardians, and school personnel, the course is in the best interests of the student. If credit is to be applied toward minimum graduation requirements, the cost of correspondence courses shall be borne by the local board of education.

(d) Tutoring. Extenuating circumstances may necessitate the assistance of tutors for certain students. However, tutoring should be considered only after all the resources of the school system have been utilized fully and when it is felt definitely that the best interests of the student are being served. If tutoring is recommended by the school for credit to be applied toward minimum graduation requirements, then the tutor, the program of study, and examination shall be approved and financed by the local school system.

(e) Examination. Credit toward graduation may be earned by the attainment of a satisfactory score on a subject-matter examination or an appropriate criterion assessment measure which has been approved for use throughout the local school system. This examination shall be administered by the school with the approval of the local superintendent of schools. A student may earn a maximum of six credits toward a diploma through qualifying examinations.

(f) Work Study Programs or Experience Outside the School. Work and experience outside the school are recognized as valid ways of learning. Time spent in these activities may be counted as a portion of the specified number of clock hours required for credit when identified as an integrated part of a planned program. No more than nine credits toward meeting graduation requirements may be granted to a student for work or experience outside the school approved and supervised by the local school system.

D. Alternatives to Four-Year Enrollment. In recognition of the fact that the four-year enrollment may not serve the best interests of some students the following alternatives are available:

(1) Accelerated Twenty-Credit Program. Under special circumstances, a student may desire to obtain the minimum 20 credits required for a Maryland high school diploma in less than 4 years. The following procedures shall govern in those circumstances:

(a) A written request by the student and the student's parent (guardian) shall be made to the local superintendent of schools requesting the waiver of the 4-year requirement and stating the reason for the request;

(b) The local superintendent of schools may approve the request on an individual basis if the specific program under which the 20 credits for graduation can be earned is feasible.

(2) Early College Admission Program. A student may receive a Maryland high school diploma through participation in the early college admission program, provided that:

(a) The student is accepted for early admission to an accredited college before high school graduation.

(b) A written request by the student and the student's parent (guardian) is made to and approved by the local superintendent of schools, asking the waiver of the 4-year attendance requirement and certifying the early admission acceptance. The student's program of the first year of college must be approved by the local superintendent of schools if the program is included toward the issuance of a high school diploma.

(c) At the conclusion of a full year of study, a written request for the high school diploma is submitted to the superintendent together with a transcript or letter from the college to the high school principal indicating that the student has successfully completed a year of college work.

(3) Early Admission to Approved Vocational, Technical, or Other Post-Secondary School. A student may receive a Maryland high school diploma through participation in an early admission program of an approved vocational, technical, or post-secondary school provided that:

(a) The student is accepted for early admission by an approved vocational, technical, or post-secondary school before high school graduation.

(b) A written request by the student and the student's parent (guardian) is made to and approved by the local superintendent of schools asking the waiver of the 4-year requirement and certifying the early admission acceptance. The student's program for the first year must be approved by the local superintendent of schools if the program is included toward issuance of a high school diploma.

(c) At the conclusion of a full year of study, a written request for the high school diploma is submitted to the superintendent together with a transcript or letter from the vocational, technical, or post-secondary school to the high school principal indicating that the student has successfully completed a year of post-secondary work.

(4) Job Entry Training Program. A student may receive a Maryland high school diploma through participation in a job entry training program provided that:

(a) The student has been accepted in a job entry program with the written approval of the local superintendent;

(b) Both the student and the student's parent (guardian) approve the cooperative agreement between the school and the employer or other approved sponsor relative to the training program;

(c) The student fulfills, through the regular day school or an approved optional plan, the minimum 11 general education credits;

(d) The student earns an additional nine credits for satisfactory work on the job under the supervision of a school teacher-coordinator in accordance with a planned agreement among the employer, the student, the parent (guardian), and the school.

(5) General Educational Development Testing Program. A student may receive a Maryland high school diploma for satisfactory performance on approved general educational development tests provided that the student meets the requirements defined in Education Article, §7-205, Annotated Code of Maryland.

(6) Transcript of Record from Nonaccredited School.

(a) The principal shall ascertain whether or not the school or schools previously attended by the student are accredited. If there is any doubt on this point, an official inquiry should be addressed to the state department of education in the state in which the school or schools are located. If the school or schools are approved by that state, credits may be allowed the student in the subjects which the student has completed successfully.

(b) A local superintendent of schools shall determine by an evaluation of a student, whether credits earned at a nonaccredited high school will be accepted at the public high school to which the student transfers. This evaluation may include administration of tests and examinations, the use of interviews, as well as the inspection of transcripts, report cards, and other documentation. The student will be notified in writing of the reasons for any failure to transfer credits from nonaccredited schools. The decision of the superintendent of schools shall be final. Pursuant to Education Article, §4-205(c), Annotated Code of Maryland, the decision of a local superintendent may be appealed to the local board. The decision of the local board shall be final.

Administrative History

Effective date: April 14, 1976 (3:8 Md. R. 427)

Regulation .02B amended effective August 11, 1978 (5:16 Md. R. 1259); September 22, 1978 (5:19 Md. R. 1446); May 21, 1984 (11:10 Md. R. 864)

Regulation .02C amended effective March 21, 1980 (7:6 Md. R. 609)

Regulation .02D amended as an emergency provision effective February 10, 1982 (9:5 Md. R. 520); emergency status expired March 12, 1982

Regulation .02D amended effective August 2, 1982 (9:15 Md. R. 1516)

Regulations .01 — .03 repealed effective July 29, 1985 (12:15 Md. R. 1524)

Regulations .01—.07 adopted effective July 29, 1985 (12:15 Md. R. 1524)

Regulation .03B amended as an emergency provision effective April 14, 1986 (13:9 Md. R. 1021) (Emergency provisions are temporary and not printed in COMAR)

Regulation .03F amended effective January 15, 1989 (15:27 Md. R. 3131)

Regulation .03G amended effective April 4, 1988 (15:7 Md. R. 851)

Regulation .03I amended effective October 3, 1988 (15:20 Md. R. 2334)

Regulation .06 repealed effective January 15, 1989 (15:27 Md. R. 3131)

Regulations .07 amended and .08 adopted as an emergency provision effective August 14, 1985 (12:18 Md. R. 1760) (Emergency provisions are temporary and not printed in COMAR)

Regulations .07 amended and .08 adopted effective December 2, 1985 (12:24 Md. R. 2350)

Regulation .07 recodified to Regulation .06 effective January 15, 1989 (15:27 Md. R. 3131)

Regulation .08 amended and recodified to Regulation .07 effective January 15, 1989 (15:27 Md. R. 3131)

CHANGES TO REGULATIONS

Changes frequently occur to regulations published in the Code of Maryland Regulations (COMAR). These changes are always printed in the *Maryland Register*, COMAR's bi-weekly supplement. Consult the "Cumulative Table of COMAR Regulations Adopted, Amended, or Repealed" in the most recent issue of the *Maryland Register*.

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APPENDIX B

RESEARCH METHODS

RESEARCH METHODS

This appendix details the methods used to conduct the research. It is organized into six sections. The first section reviews the overall approach employed to collect study data and discusses how the literature influenced the research methods chosen. The second section gives a chronology of events that both preceded and accompanied the research activities. The third section explains the six data collection strategies. In it, we also detail the specialized training that helped us prepare for the work. Fourth, we discuss site selection and sampling of participants in the research. A fifth section describes the analysis strategies involved in each data collection effort, along with discussion of efforts to ensure the reliability and validity of data. In the sixth and final section, we describe our feedback to research participants about what we learned from the research. This is particularly important for policy research such as this since the real value of the research is in the lessons policymakers learn for new efforts to improve our schools.

Overall approach

The overall approach in this study was to use several methods in several sites (five schools) to investigate the effects of a state policy initiative over a four-year time span. The research included both quantitative and qualitative methods. Quantitative data consisted primarily of student transcript records with detailed accountings of which courses students took in which subject, the degree of difficulty of the courses, the grades students received, and the number of credits they earned. In addition, the research documented students' attendance, test data, and involvement in extra-curricular activities. Qualitative data consisted primarily of field notes from interviews with state and local educators. Interviews were designed to solicit these individuals' knowledge of the new requirements and their perspectives on local implementation. Interviews were frequently supplemented with printed documents (memos, catalogues, brochures, etc.) from each school. While quantitative and qualitative data addressed some unique issues, the research was also designed so that both could inform other questions. A concerted effort was made to triangulate findings across the two basic types of data.

Two concurrent emphases guided the research, one a general interest in policy implementation and the other a focused inquiry into the effects of the new high school graduation policy on students' opportunity structure. The first emphasis, on policy implementation, is based on the concept of backward mapping (Elmore, 1980). This approach assumes that the most profound knowledge can be gained through understanding it at the local level, where it must be put into practice. Focusing on those who implement the policy and their interpretation of the policy yields a more complete picture of the policy's effects and provides more meaning than if one were to track the policy from the top down. The design invests heavily in looking at individual school responses to the new policy, with particular attention paid to perspective of classroom teachers. This bottom up focus, however, did not neglect the other end. An important part of the research involved coming to understand the historic intent of the reform as seen by the original framers of the policy. We sought the perspectives of those at both the top and bottom, as well as the middle, at district and state levels. Descriptions of important local level differences at the local level in responding to policy changes offer important but incomplete insights about the policy. It is equally important to explore the bottom line question of what impact these changes had on students' high school careers. We introduce the concept of opportunity structure to help focus that emphasis. Of interest are both the immediate and more distant forces that influence students as they make decisions about their high school careers, running the gamut from friends, family, printed materials, teachers, counselors, to schoolwide, district, and even state policies. Additional internal pressures -- individual hopes and aspirations, fears and doubts, and expectations and beliefs about what he or she ought to be doing -- rounded out the concepts that guided the research questions.

Chronology of Events

The impetus for this research grew from one state department staff's conviction that important insights could be gained from studying the implementation of the state's new policy on altering high school graduation requirements. This employee had been appointed as staff liaison to the Maryland Commission on Secondary Education and was responsible for overseeing their work and the production of the Commission's final report. Initial meetings between the research team and this state department staff member took place while the Commission was still formulating its recommendations. The timing of these meetings coincided with a new focus for the research team on more applied policy studies (Research for Better Schools, 1985).

Once the new bylaw (Maryland State Board of Education, 1985) was in place, the research team worked collaboratively with the state department staff member to develop a research proposal for the study of the implementation of this policy initiative. This proposal eventually became part of the workscope of work for the Curriculum and Instruction Division at the state department, the group formally charged with implementing the new requirements. Thus, the state bureaucracy acknowledged that this was a valued activity. The state agreed to contribute some resources, mostly staff time, to assist in data collection, gaining entry into the schools, and maintaining a positive relationship with the research sites.

Once the state approved the research, the first order of business was to seek approval from the five district superintendents to conduct the research in their respective high schools. The state superintendent drafted a letter requesting support from each of the superintendents. These approvals were reconfirmed midway through the research after there was a change in state superintendents (as well as several local superintendents).

Training each of the state facilitators (department of education staff assigned to each district) occurred next. The research team spent a day with the facilitators briefing them on the specifics of the study and their role in it. This was particularly useful in getting everyone talking the same language and having a common understanding of what was happening. Once the initial training had taken place, future changes were easily dealt with either over the telephone or by convening short meetings with everyone assembling at a research site. The evening prior to the first site visit in 1986, all the researchers, the state department staff, and the state/local facilitators reconvened to review specific assignments and to go over details for coding the transcript records. In preparation for these meetings, the researchers had developed coding forms and manuals to help guide the work of the state staff.

The research team also needed to be trained in conducting interviews. Approximately 10 experienced researchers conducted interviews over the course of the project. Two of the researchers were involved during the entire process and were responsible for the development of the research design and overall coordination of the project. They, in turn, provided other interviewers background on the study and specifics about the kinds of information sought during the interviews with students, teachers, counselors and administrators. The two senior researchers were present at all sites during the three rounds of data collection; the other eight were involved in either some visits each round or in only one round of visits for all the schools.

After the first round of data collection in 1986, the research team issued a report to the Maryland State Department of Education (Rossman, Wilson, D'Amico, & Fernandez, 1987). This report documented initial insights about the implementation process and spelled out eight recommendations, one of which was that the research continue.

In an effort to make the research as comprehensive and useful as possible, we also sought input from consultants. Shortly after the first report was issued and some plans for continuation of the research had been drafted, we made formal arrangements with three nationally recognized scholars for their input on the design of the research. Based on their recommendations, we broadened the scope of the work by expanding the transcript data sets to include substantial minority student representation and equal sets of pre- and post-policy implementation samples. In addition, we added components focusing on the state perspective and an analysis of school-level changes (i.e., analysis of school course and scheduling records).

During the three data collection phases (1986, 1988, and 1990), regular communication took place between the researchers and both the schools and state department staff. Regular meetings were scheduled with the state department to keep them apprised of progress and to seek their assistance in facilitating data collection.

Near the middle of the research effort, the state initiated a new review process for research being conducted in the state. The bureaucracy required that our research activity also be reviewed. After several delays, approval was finally obtained for continuation of the effort.

Staff turnover is one of the many trials of keeping a longitudinal research effort on track. This was particularly true for this research because we depended on the cooperation of a wide range of state and local staff. During the four years of our research, we experienced a number of key staff changes, including a new state superintendent, several new district superintendents, two new building principals, one key school liaison person, and two changes in state/local liaison staff. These changes had the potential of creating new obstacles in the data collection efforts. Two examples of staff turnover at different levels are described in more detail below. They illustrate some of the potential pitfalls and how we worked to prevent or minimize them.

The first example involves the change in state superintendents. As mentioned above, the impetus for this research came from state department staff who were working with the Maryland Commission on Secondary Education in developing the new graduation requirements. There was a concern that the state be able to document the impact of this policy change.

In July of 1988, halfway through data collection, the state superintendent resigned and a new one was appointed. State department staff informed the new superintendent of the research effort and he approved the work continuing. To assist in that information sharing process, we summarized the work to date and attended two meetings with the new superintendent. The first meeting was just with the superintendent, while the second one was with his leadership council. These meetings gave the policymakers an opportunity to hear what we were attempting; we also discussed preliminary findings. The superintendent, in turn, reinforced his support for the research by writing to the local superintendents of the five high school research sites, asking for their continued cooperation in the effort.

The second example involves turnover of key staff at the school level. Cooperation between the researchers and staff at the five high schools was critical to the success of the research. In all five cases, cooperation was superb. In the initial stages of the research the five local/state facilitators served as key contacts. When materials were needed or visits to the high schools had to be scheduled, we communicated through these facilitators who, in turn, worked with school staff. While we continued to rely on these facilitators throughout the research, after the first visits to the schools much of the communication flowed directly between the schools and the research team. Each site had a different contact person. In two cases it was the principal; in a third it was the vice-principal; in the fourth it was the chair of the guidance department, and in the fifth it was both the principal and the guidance counselor.

During the last year of research, just prior to the last round of interviews, the chair of the guidance department retired from one school. This person had been responsible for coordinating assembly of transcript records for our visits, but more importantly, also set up elaborate interviewing schedules. In this last round of data collection we had planned to conduct more than 150 interviews in this school alone. With the guidance chair's retirement just four short weeks before our scheduled visit, we worried that the replacement would either be too busy learning the new job or simply not be interested in our the research. Fortunately, neither of those was the case. The new guidance chair was a counselor already in the school who knew about the earlier research (she was one of the interviewees). She was very willing to take on the additional administrative task of sampling staff and students according to the criteria outlined for her and then ensuring that interviewees showed up for interviews. That kind of cooperation was invaluable to the project.

Data Collection Strategies

This research involved several data collection methods, including interviews, document reviews, and student transcript record review. Data collection was conceptualized around six components.

1. A qualitative, indepth set of interviews with **key state actors** who made recommendations for state bylaws outlining the new requirements. This historical perspective contributed to an understanding of assumptions, values, and purposes of the new requirements.

2. A quantitative review of **master schedules and course catalogues** to document on a school level the changes in the quantity and character of the courses being offered.

3. **Interviews and document reviews at the district level** to assess the degree to which the new requirements produced significant change in local practice. This was necessary since several districts already had in place requirements stricter than those required by the state.

4. A qualitative indepth set of **interviews with students, teachers, counselors, and building administrators** to document the effects of the new requirements.

5. A quantitative, student records-based analysis of **student transcripts** to document course-taking patterns on an individual student level.

6. A semi-structured set of **interviews with state college (two- and four-year) and university admissions officers** as well as **local employers** near the five schools to assess their views about the effects of the new requirements on the quality of recruits.

Each of these components is described in more detail below.

1. State Interviews

The new graduation requirements derive from a report prepared by the Maryland Commission on Secondary Education, a group assembled by the State Secretary of Education in 1982 to reassess the high school program in Maryland. Chapter 1 of this report outlines the details leading to the formation and deliberation of this group. This group of 23 educators and citizens prepared a series of six reports, the first of which was Recommendations of the Maryland Commission on Secondary Education. Volume I: Graduation Requirements (Maryland State Department of Education, 1983). These recommendations were then forwarded to the State Board of Education and, after considerable debate, the State Board enacted a revised set of requirements into bylaw in July, 1985. A copy of this bylaw is reproduced in Appendix A.

To better understand the Commission's values and assumptions as it carried out its charge, we interviewed five members. The five were chosen to represent the diversity of roles (state staff, local district staff, business, and university faculty) on the Commission. All five were known to be critical and thoughtful participants in Commission deliberations. The five members were interviewed using an open-ended interview guide with a series of predetermined questions. The open-ended format encouraged flexibility and allowed the interviewer to probe interesting tangents. The interviews were conducted several years after the Commission's work had been completed but just at the time that the new requirements were beginning to be felt by local school districts.

The same senior researcher conducted all the interviews. Interviews were tape-recorded and transcribed for further analysis. The lengths of the interviews varied from one to two hours. Six broad themes guided the interviews (a completed interview guide can be found in Appendix C, Protocol C.1):

1. What was the background that brought the Commission member his/her appointment?

2. What was the state and national political climate at the time of the Commission's deliberations and how did that affect the deliberations.

3. What was the process that the Commission employed to accomplish its work?

4. What was behind the set of recommendations that the Commission forwarded to the State Board?

5. What happened between the time the Commission report was made public and the State Board passed the new bylaws?

6. What has been the impact of the new requirements?

Commission members were also asked to share with us any documentation they had kept on the work and deliberations of their team. The research team reviewed these documents to look for further clues about the values and assumptions underlying the Commission's efforts.

The work of implementing these new requirements at the state level fell to a small group of MSDE staff. Seven key state staff were interviewed for their perspectives on the process of implementing this policy. These staff were selected because their expertise correlated well with the areas affected by the requirements. Three of the seven staff were from Instruction, one each from Support Services, Vocational-Technical Education, Special Education, and Communications. Four broad categories of questions guided these open-ended interviews, which lasted from one to one-and-a-half hours each. These interviews were also tape recorded and later transcribed for further analysis. The categories included:

1. What has been the nature of your involvement in the state implementation team?

2. What was the intent of the requirements and what has helped/hindered in the implementation of the initial intent?

3. What has been the state's role in the implementation process?

4. What has been the impact of the new requirements?

A complete interview guide may be found in Appendix C, Protocol C.2.

2. School-Level Course and Schedule Effects

The master schedule and course catalogue analyses gave a detailed accounting of school-level effects of the new policy. This component shifted the unit of analysis from the state to the school. Here we were concerned with how the new requirements affected the kinds and number of courses offered and the scheduling of those courses. Perhaps the single biggest impact on the operation of the American high school is the schedule of courses. Most school schedules operate under "zero sum" principles.

That is, if additions are made in one area, they necessitate deletions in another. For example, if five new sections of mathematics are scheduled to accommodate the additional math requirement, five sections of something else will probably have to be eliminated. This would not necessarily be the case if additional funds were available to hire staff to teach these sections. The new requirements, however, made no such provision for that. Thus, important tradeoffs typically had to be made in adjusting the schedule.

To empirically test these changes, we reviewed six year's worth of master schedules (1985-1990). The number of course sections taught in each department was tallied and compared across years. One complicating factor was enrollments in each section. A longitudinal comparison of the number of sections offered would be appropriate only if the number of students in those sections did not change from one year to the next. Unfortunately, those data were not available to us for all five schools. For three of the five schools, master schedules documented courses without indicating the number of students in them. In these schools any conclusions we draw about changes over time must necessarily be more suspect than findings in schools where we were able to verify the number of students per section. Thus, this analysis compares only the three schools where enrollments per section were known.

3. District Staff Perceptions of Effects

The typical flow of communication about the new requirements was from the state department to central office staff in the 24 Maryland school districts. A new linkage was established with regular meetings between state department staff and the district directors of secondary education (or their role equivalents). These directors, in turn, were responsible for disseminating information to individual schools. Consequently, it was important for us to find out central office administrators' views on the new requirements.

The fact that many districts in the state had graduation requirements that exceeded those of the state also made it necessary to collect district-level data. Indeed, some of the more aggressive districts regarded themselves as being more enlightened than the state and prided themselves in being one step ahead. They mandated increased requirements that both preceded and exceeded those required by the state. Understanding that district context was important in understanding the school response. Consequently, a handful of central office administrators in each of the five districts in the study were interviewed to get their views on the new state requirements and to learn more about specific requirements of their own school systems. Researchers conducted open-ended interviews, between half an hour and an hour in length, writing responses by hand directly on the interview guide. Questions concerned specific district requirements that exceeded state requirements, the process of communicating the requirements to individual schools, the impacts the requirements had on schools, the purpose of the Certificate of Merit, and the strategies, if any, districts employed to monitor the effects of the requirements. A complete interview guide is duplicated in Appendix C, Protocol C.3.

4. School Interviews

We conducted interviews in the five schools with four different role groups: students, teachers and department chairs, counselors, and building administrators. Three rounds of interviews were conducted over the duration of the project, the first set in the fall of 1986. These were held just after the new requirements had been enacted into bylaw but before the schools had much opportunity to accommodate the changes. Consequently, responses were very speculative in this first round, with staff and students hypothesizing about changes that might happen in the future.

The second round of interviews was completed in the spring of 1988. By that time many of the changes were already in place (e.g. changes in course offerings, changes in scheduling, teacher reassignments, etc.) and individuals interviewed could offer more direct anecdotal insights into how the requirements had affected them and their school.

The third round of interviews was completed in the spring of 1990. Since the first class to graduate under the new requirements was the class of 1989, these interviews gave us our first information after implementation had occurred, including data on any last minute adjustments made to accommodate seniors that may have been missed in 1988, and the stability of effects first documented in 1988.

These three rounds of school interviews provided an important longitudinal perspective on the implementation of the policy. Where possible, we interviewed the same people so we could document their perceptions of effects over time. Important interview protocol changes were made between the 1986 and 1988 interviews, with only minor changes made between 1988 and 1990. Furthermore, researchers' regular visits to the schools to conduct interviews and collect transcript records offered important insights about the culture of each school and how that was or was not changing over time.

In all three rounds, interviews were conducted in two-day visits to each high school. Anywhere from three to five trained field researchers conducted the interviews. Interviews were open-ended and the interviewers were given license to probe and seek more information to interesting responses. Responses were hand written onto an interview protocol. Researchers then coded those responses that lent themselves to frequency counts (yes/no or how often something occurred) and entered them into a computer for further analysis. See the section on analysis plan later in this appendix for details on this.

The overall intent of the interviews was to get local reaction to the implementation process and to solicit interviewees' perceptions of the effects of the state-mandated policy change. While the purpose was the same for all four role groups, there were important differences in the types of questions asked each group.

Student Interviews. Student interviews began with questions that elicited descriptive information about the students (e.g. courses taken, activities, post-school plans). Specific questions addressed their knowledge of the requirements, the Certificate of Merit option, and the importance students placed on the additional math, fine arts, and practical arts credits. Questions about tracks in the school were also asked, along with inquiries about who influenced student course selections. The interview concluded with students' views on the quality of education they had received and the impact of the new requirements on that quality. The completed interview guide from 1990 is reproduced in Appendix C, Protocol C.4.

Teacher Interviews. Teachers and department chairs were asked the same questions. Questions in this guide (reproduced in Appendix C, Protocol C.5) focused on how the curriculum in the subject area had changed, staff adjustments, and other organizational adjustments. Interviewers also probed for the differential effects of the policy on different student groups (e.g. dropouts, minorities, vocational). Several questions addressed the Certificate of Merit options, focusing on what interviewees thought the purpose was, what courses their department offered, and the effects of this option on students. Another topic was how tracking had changed. The interview concluded with a set of questions about whether teachers thought students were better off as a result of the new requirements.

Counselor Interviews. The bulk of the responsibility for monitoring the requirements fell to high school guidance staff. Interviews with counselors were designed to learn more about the role counselors played in student course selection and counselor's responsibilities in implementing the new requirements (e.g. as record keepers and information providers). As with teacher interviews, counselors' opinions were also sought on the differential effect of the policy on different student groups, views on the Certificate of Merit option, tracking in the school, and whether the students/school were better off having implemented the new requirements. A copy of the completed set of questions can be found in Appendix C, Protocol C.6.

Building Administrator Interviews. The final set of school interviews was with school principals and assistant principals. In addition to the same questions asked of teachers and counselors about the effects of the requirements on different student groups, impressions of the Certificate of Merit option, tracking in the school, and the overall effect on students and the school, building administrators were asked several unique questions. Since these were the people most likely to have overall perspective on the school, they were asked more global questions about curricular, organizational and staff changes. This protocol is duplicated in Appendix C, Protocol C.7.

5. College and Business Perceptions of Effects

In order to understand the effects of the requirements on students' post-secondary plans, we conducted a series of telephone interviews with two- and four-year college admissions officials in the state of Maryland and with employers from local businesses in the communities where the five high schools were located.

College admissions officers from nine Maryland community colleges and fourteen four year colleges, both public and private, participated in short (10 to 20 minutes) telephone interviews. Interviews were open-ended so that if college staff wanted to elaborate on a point they were able to do so. The complete guides are in Appendix C, Protocols C.8 and C.9. A major focus of these interviews was the Certificate of Merit since that is the program of studies that emphasizes a more rigorous academic program, something colleges are presumably looking for in student transcripts. The questions focused on admissions officers' knowledge of the Certificate and how they used it in making admissions decisions. There were also several questions about the other graduation requirements and whether the requirements had made an impact on their applicant pool. Interviews concluded with a question about whether students were more academically prepared as a result of the new requirements.

Thirteen interviews were conducted with local area employers. These interviews were also conducted by telephone and usually took between 10 and 20 minutes. They were open-ended but followed a general outline (see Appendix C, Protocol C.10 for a sample interview guide). In these interviews, we focused on the qualities employers looked for in screening prospective employees, whether they reviewed student transcripts as part of the process, whether they knew about the new requirements and what impact those had on graduates, and finally, whether they had any knowledge of the Certificate of Merit and whether it held any value for them as employers.

6. Student Transcript Record Analysis

This part of the data collection was by far the most time consuming and complicated. The new requirements affected a wide range of subject areas: math, fine arts and practical arts for a basic diploma, but potentially all subject areas for a Certificate of Merit. The research staff also recognized that when changes were made in one subject area (e.g. adding a math course), areas not directly mentioned in the new requirements felt the impact (e.g. less flexibility for elective courses). Consequently, we though it necessary to look at students' complete course-taking patterns (i.e. all courses).

This data collection effort began by constructing a portrait of course-taking patterns for a baseline group of students (class of 1986) from the five high schools. Initially, we regarded this as a pilot effort. We selected a small sample and conducted analyses to see if it would be worthwhile to expand the sample to include more students, as well as another cohort of students affected by the requirements. With this latter group the research team would then be able to compare and contrast a group of students who completed high school before the requirements took effect (class of 1986) and another group who planned their studies after the new requirements were in place (class of 1989). Initial analyses (see Rossman, Wilson, Fernandez & D'Amico, 1987) documented interesting variations in course-taking patterns and suggested the usefulness of this component for more detailed analyses.

We visited each of the five schools in the fall of 1986 to collect transcript data on the class of 1986. School staff made available to us permanent record files for that class. The logistics of such an effort required close coordination between the schools and the research team. In the initial phases of the work, state facilitators coordinated the effort. Each facilitator worked with the school before our research team arrived to assemble the material for coders. The following information was recorded from each transcript: title of the course taken, the course's level of difficulty, number of Carnegie credits associated with the course, and grade earned in the course. Each course's degree of difficulty was scored on a five-point scale: (1) Advanced Placement or Honors (2) Academic or Certificate of Merit-eligible (3) General (4) Business/Vocational (5) Special Education. A single person assigned these values to all the transcripts, while teams of researchers recorded the rest of the information. A review of course descriptions and consultation with counselors or department chairs guided the assignment of degree of difficulty. Once the subject and level of difficulty codes were assigned, another researcher double checked all the codes to ensure they were accurate.

Information on each student was transcribed by hand onto coding sheets which were then used to keypunch the data into a computer for further analysis. A sample of the coding form used for the 1989 data collection effort is reproduced in Appendix D. The process of transcribing these data was very labor intensive and required careful attention on the part of the transcribers. Typically, a group of 5 to 10 staff (usually a combination of research and state department staff) worked on this. All of these staff were trained in what to look for. More details about that training are presented in the section below. However, it should be noted here that what appeared to be a fairly straight forward transcription process rarely turned out to be so. Often data were missing or were not located in the place on the form where they should have been. Summer school credits illustrate the care we had to take. Often students would make up courses they had failed (or done poorly in) in summer school and that course would be recorded elsewhere on the transcript without any cross referencing to the original course. Only careful attention to detail enabled researchers to pick up important idiosyncrasies of individual school record keeping practices that had an impact on students' transcripts.

Each school had a different system for recording and reporting data. Another example of how varied local conditions complicated the data collection effort comes from the small rural site. At this school the guidance counselor entered all the courses students took and their grades into a local computer. While the computer screen accepted up to a 20-character description of a course, unbeknownst to the counselor the computer only saved the first 11 characters. He entered all the course titles and at the end of the course title entered the track (at this school there are three tracks: general, business, and college prep). These track distinctions were important to the researchers' coding, but when the district computer truncated course labels to 11 characters, those track distinctions were often not included. Fortunately, the small size of the school proved advantageous for us. There was usually only one section of each course in each track and those sections were offered at different periods during the school day. Since the transcript records were arranged chronologically by period of the day, it was possible to know that second-period American literature was college prep track while third-period American literature was general track. This is just one small illustration of the difficulties encountered in working with transcripts across multiple school sites.

Another complication arose with reporting grades for each course. Four of the five schools used letter grades (A, B, C, D, or F), but one school used a numerical system (0 to 100). Fortunately, the district publishes a translation code that it sends with transcripts to colleges and employers. Thus, the research team was able to convert all the course grades (e.g. 93 to 100=A).

The cumbersome process of recording transcripts by hand led the research team to explore getting computerized student records from district computer files. We attempted this in two of the larger, more sophisticated districts for the first two years of data for the class of 1989, meeting with only limited success. Several stumbling blocks prevented us from using the computerized records with the rest of the data collection effort. First, not all the information was available on a single file. Often different departments within the district had responsibility for different pieces of the data puzzle and the system was designed so that these pieces could not be integrated. Second, computer tapes were not in a format that could easily be moved to files for statistical analysis. They all had to be manipulated and reformatted to make them compatible with other files. That process took several months and canceled out any gains obtained by not doing the work by hand. Third, not all the districts had computerized records. Only two of the five districts were fully computerized in 1988 when this approach was piloted. Finally, there were often inconsistencies (some more serious than others) between the district records reported and what was on the school records. Several careful checks revealed that school records were often more accurate than district records. Consequently, we decided to transcribe all student data by hand.

Site Selection and Sampling

Sampling required two levels of decisions. The first concerned which schools would be in the school sample; the second involved which students and staff within the sampled schools would be involved in the research.

1. School Selection

The state department of education selected the five school sites for the research. When the original Commission was formed in 1982, five schools were made field site schools. The intent was that any data collection efforts that were part of the larger high school reform initiative, or any new innovations could be piloted in these schools. The five schools were chosen for their diversity and because they represented the full range of high schools Maryland's students might attend. The student populations from these schools came from urban, suburban, and rural settings, and reflected a mix of social and ethnic groups. The size of the student populations also varied markedly. In addition, the five sites represented the full range of economic health in the region and a diverse set of family socio-economic levels. Chapter 1 of this report provides a discussion of each site.

2. Student and Staff Selection

An initial sample of 50 students was randomly selected from each school for the review of student transcript records. The purpose of this initial sample was to test whether the process of transcript record analysis was viable and whether the results would yield any consistent, interpretable patterns. This initial sample simply consisted of a random selection of graduates from the class of 1986 (e.g. every ninth student from an alphabetical list). After a successful initial analysis, samples from each school were significantly increased. The guiding principle in sample size was that there be an adequate sample of students (N=100) from each significantly represented racial group. In the small rural school, all graduates were included since less than 100 graduated each year. In an additional two suburban schools with predominately white populations, approximately 100 white students were randomly selected (i.e. an additional 50 were added to the original 50). For the two urban schools with racially diverse populations, we tried to obtain data from as large a sample (preferably 100) from each group. In one school where the population was almost equally split between whites and blacks, approximately 100 students from each group were randomly selected. In the final school which had a significant proportion of whites, blacks, Asians, and Hispanics, as many students in each group as possible (with a maximum of 100) were selected.

This sampling process was complicated by the fact that realistic comparisons require that data be available for students across all four years of their high school careers. Furthermore, the ideal situation would be for students to have experienced their entire four-year program in the same school. Given transiency rates in urban settings, obtaining that ideal was not always possible. As a compromise, only students who were enrolled for a minimum of three years at the one school were included in the sample. Separate analyses were performed to compare students who were enrolled in the same school all four years versus those enrolled for only three years. No significant differences were noted in course-taking patterns.

Table B.1 summarizes the number of student transcripts collected at each school site for both pre (1986 graduates) and post (1989 graduates) policy changes. Samples were also drawn when conducting the three rounds of interviews with school staff and students in 1986, 1988, and 1990. In all cases scheduling and final selection of interviewees was made by the liaison person in each of the schools. The research staff worked with that liaison person to define the guidelines for selecting interviewees.

Table B.1:

Student Transcript Sample Size by School

School	**PRE** (1986)	**POST** (1989)
Fast Track	100	104
United Nations	206	288
Urban	193	137
Suburban	108	105
Rural	60	37
Total	**667**	**671**

Every attempt was made to interview all the counselors and administrators (principal and assistant principals with instructional responsibilities) in each building. Only a select few teachers and students were interviewed. Selection criteria for teachers included diversity in teaching experience, content area, and perspective. Also, priority was given to interviewing teachers in departments that were more directly affected by the requirements (e.g. math, fine arts, practical arts). A balance was sought when interviewing students. The goal was to interview a representative group of students with varied ability, race, track and enthusiasm for school. The sample was increased during the last round since this was the first group of students who had seen the full effects of the requirements. Table B.2 summarizes the number of interviews conducted for each role group, by year and by school.

Table B.2:

Student and Staff Interview Samples by School

Sample	Year	Fast Track	United Nations	Urban	Suburban	Rural
Students	1986	12	14	9	12	12
	1988	17	16	15	19	18
	1990	36	95	58	30	44
Teachers	1986	11	17	14	27	26
	1988	15	16	14	17	12
	1990	38	38	31	52	15
Counselors	1986	3	3	3	2	1
	1988	3	3	5	4	1
	1990	3	7	3	4	1
Administrators	1986	3	3	4	4	2
	1988	3	2	2	2	1
	1990	3	4	2	3	1

A sampling strategy was also employed to elicit local college and business response to the requirements. For two-year colleges, priority was given to selecting sites that students in the study would attend, but keeping in mind also the need for some geographic balance around the state. We interviewed nine community college admissions officers.

Criteria for selecting four-year colleges included whether students in the study attended the institution, geographic balance and level of competitiveness (most competitive, competitive, and less competitive). We interviewed 14 admissions officers from four-year colleges.

Nominations for local businesses to be included in the sample were solicited from the five schools' guidance departments. We sought sites that hired the largest number of students for permanent positions upon graduation. During the interviews researchers asked employers to nominate other places of business that employed high school graduates.

Analysis Plan

While there were six different components to the data collection effort, there were basically two kinds of data: (1) quantitative data represented by individual student transcript records and school course schedules, and (2) qualitative data collected through interviews with various role groups.

1. Quantitative Data Analysis

Student transcript records provide a portrait of course-taking patterns for a large sample of students in each of the five schools over the entire four years of enrollment. By using the computer to scan characteristics of individual courses, we were able to create a composite picture. A series of broad questions helped guide these analyses.

1. Are students enrolling in more courses? Are there differential effects by school, race, track, gender, or academic performance?
2. Are students enrolling in more rigorous courses? That is, are they earning more advanced credits, both in total and as a proportion of total credits? Are there differential effects by school, race, track, gender, or academic performance?
3. Are students struggling more with their courses? (e.g. Are their GPAs lower? Are more students failing courses?) Are there differential impacts by school, race, track, gender, or academic performance?
4. Have the number of credits earned been affected in areas influenced by the requirements (e.g. math, science, foreign language, fine arts, practical arts, business, vocational, social studies)? Are there differences by school, race, track, gender, or academic performance?
5. Has the tracking system tightened or loosened as a result of the requirements? Are there differences by school, race, track, gender, or academic performance?
6. Has the proportion of students enrolling in each track changed?
7. Has the distribution of courses across subject areas changed as a result of the requirements? Are there differences by school, race, or track? As a corollary, are students enrolling in proportionately fewer academic courses (i.e. English, math, science, social studies)?

Comparisons were made between students in the pre-implementation class (class of 1986) and post-implementation class (class of 1989). The general strategy was to compute mean scores (e.g. number of credits earned, as defined by Carnegie units) and then employ statistical analyses (e.g.

analysis of variance) to explore whether significant differences exist across groups. We often found it necessary to go through several steps before data across the five schools were comparable. For example, some of the schools offered only full year courses (i.e. courses measured in single Carnegie unit credits) while other schools offered only semester courses (one half a Carnegie unit). Yet others had combinations of full year and semester credits. Moreover, many vocational course offerings were multiple credit courses, further confounding analysis. The value of these different credits all had to be standardized before comparisons could be made across schools.

Similarly with the school master schedules, the number of sections of each course offered each year was hand tallied and compared across the years during which the policy was being implemented.

2. Qualitative Data Analysis

Analysis of interview data took several forms. When there were small numbers of interviews (e.g. Commission members, district administrators), one researcher read all the interviews and summarized the basic tone of comments with appropriate quotes. When the number of interviews was larger (teachers, counselors, administrators, and students), a case analysis strategy was adopted. That is, the data were summarized by role group and by school according to the five broad questions guiding this inquiry. Within those five questions, a set of categories helped define key points. Some examples included:

Information:	level, sources
Departmental effects:	staffing, recruiting, electives, working conditions
Organizational effects:	scheduling, record-keeping, changes in the tracking system, working conditions
Special programs:	special education, vocational students, non-native English speakers, dropouts, minorities
Curricular effects:	changes in content, shifts in track, addition/deletion of courses

Coding of data and analyses were conducted by several researchers to ensure systematic conclusions. In addition, preliminary findings were shared with participants in each of the five school sites and state department staff, thereby ensuring the credibility and usefulness of the findings.

Feedback

Regular communication between the research team and state department staff was maintained throughout the process. Since state department staff also participated in much of the data collection, natural opportunities arose while in the field to discuss and react to what we were learning. In addition, regular meetings between the research staff and state department staff kept the state up-to-date on progress and enabled state staff to provide important support when needed.

After the first round of data collection in 1986, where student transcripts from the baseline year were collected and analyzed and interviews were completed in the schools, a formal progress report was presented to the state (Rossman, Wilson, D'Amico & Fernandez, 1987). This report documented preliminary findings and offered a series of policy recommendations. The report was circulated widely throughout the state department and in local districts across the state. Three presentations based on the report were part of the dissemination plan: presentation at a major state convention on school reform; a presentation to a national research annual meeting, the American Educational Research Association; and a briefing to the 24 local district high school liaison staff. This latter group was created especially to help keep high school staff informed of state reforms.

In addition to the initial presentation at the American Educational Research Association, the research team has made annual presentations at the association's meetings on various pieces of the research (Rossman, D'Amico, & Wilson, 1987; Wilson & Rossman, 1988; Wilson, Rossman & Adduci, 1989).

As noted earlier, the state superintendent was also kept informed of research progress. His leadership council also had the opportunity to review some of the preliminary findings and to discuss the implications for future policy initiatives.

By serendipity the state superintendent is currently initiating a plan for improving Maryland's schools by the year 2000. This plan has 10 major goals and 15 strategies necessary to accomplish those goals (Schilling, 1990). The ten goals, adopted by the state board on May 22, 1990, reflected the national goals for education (U.S. Department of Education, 1990); recommendations in major state reports on school performance (Maryland State Department of Education, 1990a); vocational education (Maryland State Department of Education, 1989a); middle learning years (Maryland State Department of Education, 1989b), and students at risk (Maryland State Department of Education, 1990b); and issues identified through the state's strategic planning initiative.

The 15 strategies are being elaborated as this report is being written. One of the strategies is to revisit high school graduation requirements. The state board has empowered a group of educators and business leaders to be part of this process and to make recommendations. Their deliberations will be informed by the research from this report.

APPENDIX C

INTERVIEW PROTOCOLS

Protocol C. 1 : Maryland Commision on Secondary Education Interview Guide

Protocol C. 2 : Maryland State Department of Education Interview Guide

Protocol C. 3 : Central Office Administrator Interview Guide

Protocol C. 4 : Student Interview Guide

Protocol C. 5 : Department Head/Teacher Interview Guide

Protocol C. 6 : Counselor Interview Guide

Protocol C. 7 : Building Adminstrator Interview Guide

Protocol C. 8 : Four Year College and University Interview Guide

Protocol C. 9 : Community College Interview Guide

Protocol C.10 : Employer Interview Guide

Protocol C.1

Maryland Commission on Secondary Education Interview Guide

Background

1. What was your job responsibility at the time you were appointed to the Maryland Commission on Secondary Education? What are you doing now?
2. What expertise do you have that was relevant to the tasks of the Commission?
3. Why were you selected?

Setting the Stage

1. Many state-level reforms were initiated around the nation in the early 1980s in response to negative assessments of secondary education in America. From your perspective, how did the work of the Commission fit into this bigger NATIONAL picture?
2. Can you describe the political climate within the State of Maryland in which the Commission operated?
3. What were the primary motivating factors behind the initiative to reform secondary education in Maryland? Where did the ideas come from? Who was behind them?
4. As the Commisssion began its deliberations, what was the image you personally had of what an ideal high school experience should be? Did the commission have a collective image? If so, what was it?

The Process

1. Describe the process followed by the Commmission in its deliberations? How did you decide on roles and responsibilities? How did you decide what the major issues were? Did you employ any data gathering techniques?
2. What were the key factions both within and outside the Commission that influenced the deliberations? Who were the key actors? What were they lobbying for? How did they go about persuading others of their positions?

Drafting the Recommendations

1. What was the primary intent of the recommendations made by the Maryland Commission on Secondary Education?
2. Were there compromises in drafting the recommendations? If so, what were they?
3. From your perspective, what has been the impact of those compromises?

From Recommendations to Bylaws

1. Describe the process by which the recommendations became bylaws. How involved in the process were you?
2. The bylaw only incorporates Volume 1 of the recommendations? How did that come about?
3. What were the problems that the bylaws were intended to correct?

Impact

1. From your perspective, what should have been the major impact of the changes? What has the impact been?
2. If you could do it again, what would you do differently?

Protocol C.2

Maryland State Department Interview Guide

Background

1. How long have you been involved with providing service to Maryland high schools with respect to the new graduation requirements?

2. Why were you selected to be involved on this team?

Context

3. From your perspective, what was the impetus for the changes in the requirements?

4. What was the educational climate like in the state at the time of the changes?

5. Has the educational climate changed? If so, how and why? If not, why not?

6. From your perspective, what was the original intent of the new requirements?

7. To what degree have the original intents been met?

8. What has helped/hindered in implementing the initial intents?

The State's Role in Implementation

9. From your perspective, what role does the state play in the on-going implementation of the new requirements?

10. Has the state's role changed? If so, how and why? If not, why not?

11. In what ways are you helping local schools? (get specific examples).

Impact

12. What has been the local response to these new requirements? Why is that so?

13. What issues have most consumed the energies of school people in response to the requirements? Have those shifted over time?

14. The 1989 graduating class (last June) was the first class to have to fully comply with the new requirements. Did local systems have to alter the ways they were implementing the requirements to accommodate this cohort?

15. What are the biggest effects on local schools? Why these?

16. What are the biggest effects on students? Are they different for different groups? How?

17. What has been the response of the business community/universities to the changes?

18. In your opinion, do you think the new requirements have been worth the effort? Why or why not?

Protocol C.3

Central Office Administrator Interview Guide

1. Does the system have graduation requirements that exceed the new state requirements? If so, what are they? When were they implemented?

2. What have you done to communicate information to your high school staffs about the new requirements? Do you have any printed materials that outline this information?

3. Have any organizational changes taken place at the district office to accommodate the new requirements (e.g., record keeping)? How successful have they been? Do you anticipate making any additional changes?

4. Have the new requirements had any impact on staffing assignments in your high schools? If so, how? Do you anticipate any changes in the future?

5. Have the new requirements had any impact on the curriculum in your high schools? If so, how? Do you anticipate any changes in the future?

6. What impact have the new requirements had on students? Are they more serious about school? Will they impact the dropout rate? What impact will they have on racial/ethnic minorities and special education students?

7. What do you think is the purpose of the Certificate of Merit? What changes has the system made to accommodate the requirements for the Certificate of Merit?

8. Are you in anyway monitoring the effects of the increased requirements?

9. I have asked you several questions about the new requirements. Is there anything that I have left out?

Protocol C.4

Student Interview Guide

1. Describe yourself as a student. (a) What kinds of courses do you take? (b) What kinds of grades do you get? (c) Do you participate in any extracurricular activities? (d) Do you work? (e) What are your plans after you graduate?

2. (a) Do you know what the course requirements are for you to graduate from high school? What are they? (b) Did you know about these requirements far enough in advance to meet them? (c) Were there any courses you might not have taken but did because of the requirements? (d) Were there any courses you wanted to take but couldn't because of the requirements?

3. The course requirements include three credits of math, a credit in a fine arts course, and a practical arts course. Which courses did you take? Why did you take them? Was it important to you to learn about these subjects?

4. If you could make up the course requirements, would you make any changes? (probe for additions/deletions).

5. (a) What do you know about the Certificate of Merit option as part of the state's course requirements? (b) How did you learn about it? (c) Are you interested in earning it? (d) If so what kinds of courses have you taken? (e) What kinds of students attempt the Certificate of Merit option? [NOTE: for students who were interviewed in 1988, ask them to comment on any changes in responses]

6. If you have wanted to enroll in advanced-level courses in this school, have there been any barriers? If so, describe them.

7. Imagine that you want to take more advanced courses than you do now. What would be the reactions of your teachers? Counselor? Friends? Parents?

8. (a) Who helps you decide what courses you want to take? (e.g. friends, parents, teachers) (b) Who was the most influential? (c) What role does your school counselor play? (d) Did your counselor go over the specific course requirements and point out what you needed? (e) Did your counselor tell you about the Certificate of Merit and its requirements?

9. Have you received an adequate academic education at this school? Did the graduation requirements play a role in that?

10. What issues have we not raised about the course requirements for graduation which are important to you?

Protocol C.5

Department Head/Teacher Interview Guide

1. (a) Has the curriculum in your department been affected by the new state graduation requirements? (b) If so, how? (FOR TEACHERS IN MATH, FINE ARTS AND PRACTICAL ARTS, BE SURE AND PROBE WITH THE FOLLOWING QUESTIONS) (c) Have any new courses been designed to fill the requirements in your department? (d) How successful have they been? (e) What courses have changed to meet the new requirements? (f) How?

2. Have any staffing adjustments been made in the past two years in your department as a result of the new state graduation requirements? How successful have they been?

3. Are there any other changes in your department that have taken place as a result of the requirements (e.g. record keeping/scheduling)?

4. Have the new graduation requirements influenced the dropout rate? How? Have the new requirements had a differential effect on particular subgroups of students (special education/vocational/ethnic minorities/foreign born)?

5. What do you think is the intended purpose of the Certificate of Merit option (as part of the new state graduation requirements)? How well has the school carried out this purpose?

6. (a) What Certificate of Merit courses does your department offer? (b) Which of these courses are new? (c) Which ones were revised? (d) How were they changed?

7. Has your own work been influenced by the introduction of the Certificate of Merit option? How?

8. (a) To what degree has the Certificate of Merit option motivated more students to take advanced courses? (b) What kinds of students are trying to obtain the Certificate of Merit? (c) Do you personally encourage students to pursue the Certificate of Merit option? (d) Is so, which students are you most likely to encourage?

9. Our analysis of student tracnscript records indicates that course taking patterns have changed because of the new state graduation requirements. Has the system of curricular programs in this school been affected by the requirements? How?

10. (a) Are students more academically prepared as a result of the new state graduation requirements? (b) Are they more well rounded academically? (c) Have their aspirations been raised? (d) Are they more planful about course selections? (e) Are they more concerned about how their course selections link to what they might want to do after high school?

11. Are the new state requirements putting more pressure on students?

12. Is the school better or worse off as a result of having implemented the new state graduation requirements, or have you seen no change? In what ways?

13. Are there any important issues related to the new requirements we have not discussed?

Protocol C.6

Counselor Interview Guide

1. Please describe the role you play in interpreting the new state graduation requirements for students? Think back four or five years ago before the new state graduation requirements were put into place. Has your counseling role changed because of the graduation requirements? How?

2. What do you take into consideration in working with students to make course selections?

3. Have the new state requirements influenced the dropout rate? How? Have the new requirements had a differential effect on particular subgroups of students (special education/vocational/ethnic minorities/foreign born)?

4. Our analysis of student transcript records indicates that course taking patterns have changed because of the new state graduation requirements. Has the system of curricular programs in this school been affted by the requirements? How?

5. (a) Are students more academically prepared as a result of the new state requirements? (b) Are they more well rounded academically? (c) Have their aspirations been raised? (d) Are they more planful about course selections? (e) Are they more concerned about how their course selections link to what they might want to do after high school?

6. What do you think is the intended purpose of the Certificate of Merit option (as part of the new state graduation requirements)? How well has the school carried out this purpose?

7. (a) To what degree has the Certificate of Merit option motivated more students to take advanced courses? (b) What kinds of students are trying to obtain the Certificate of Merit? (c) Do you personally encourage students to pursue the Certificate of Merit option? (d) If so, which students are you most likely to encourage?

8. Are the new state requirements putting more pressure on students?

9. Is the school better or worse off as a result of having implemented the new state requirements, or have you seen no change? In what ways?

10. Are there any important issues related to the new state requirements we have not discussed?

Protocol C.7

Building Administrator Interview Guide

1. Have any organizational changes taken place in this school over the past two years as a result of the new state graduation requirements? (e.g. number of periods, length of periods, record keeping procedures) What are they? What advantages/disadvantages have you seen from these changes?

2. As a result of the new state graduation requirements have you made any recent staffing adjustments? What are they? How adequate have they been?

3. Has the curriculum changed as a result of the new state graduation requirements? How?

4. (a) Are students more academically prepared as a result of the new state requirements? (b) Are students more well rounded academically? (c) Have their aspirations been raised? (d) Are they more planful about course selections? (e) Are they more concerned about how their selections link to what they might want to do after high school?

5. Have the new state graduation requirements influenced the dropout rate? How? Have the new requirements had a differential effect on particular subgroups of students (special education/vocational/ethnic minorities/foreign born)?

6. Our analysis of student transcript records indicates that course taking patterns have changed because of the new state graduation requirements. Has the system of curricular programs in this school been affected by the requirements? How?

7. What do you think is the intended purpose of the Certificate of Merit option (as part of the new state graduation requirements)? How well has the school carried out this intended purpose?

8. To what degree has the Certificate of Merit option motivated more students to take advanced courses? What kinds of students are trying to obtain the Certificate of Merit?

9. Are the new requirements putting more pressure on students?

10. Is the school better off or worse off as a result of having implemented the new state requirements, or have you seen no change? In what ways?

11. Are there any important issues related to the new requirements we have not discussed?

Protocol C.8

Four Year College and University Interview Guide

Certificate of Merit (CM) Questions

1. Are you familiar with the Certificate of Merit?
2. How did you find out about it? Did the MD State Depart Educ inform you?
3. What do you know about it?
4. Do you consider the Certificate of Merit when admitting students? To what extent? Can you tell if students are pursuing the CM when looking over their records?
5. Do you bring up the CM in interviews with students?
6. Do students bring up the CM in your interviews with them?
7. Does the CM ever get mentioned in the letters of recommendation that students have submitted? By whom?
8. What are the most important things that you consider when admitting a student into your school?
9. Has this changed at all in recent years? If yes, how?

Graduation Requirements (Non-CM) Questions

10. Are you aware of the new graduation requirements for MD residents that were put into effect for the class of 1989?
11. Have these new requirements had any impact on your applicant pool these past two years?
12. Are students more academically prepared for college as a result of the new graduation requirements?

Protocol C.9

Community College Interview Guide

College________________________________

Name of interviewee________________________________

Title________________________________

Date______________

General

1. What percentage of your students are from MD public schools?

2. From what high schools do most of your students come?

Certificate of Merit Questions

3. Are you familiar with the Certificate of Merit (CM)? (If not); have you ever seen a CM marked on a student transcript next to course names?

4. What do you know about the CM?

5. How did you find out about it? Did the Maryland State Department Education inform you?

6. Please describe the admissions procedures at your college. Do you interview students? (If yes, does the CM ever get brought up in the interview either by you or the student? Do students submit letters of recommendation? (If yes, does the CM ever get mentioned in letters of recommendation that students have submitted? By whom?

7. Do you know when a student is applying whether he/she is taking CM courses or receiving a CM?

8. Do you notice any differences between those students who earn a CM and those who don't?

9. Do those students who earn a CM seem to be better prepared for college?

Graduation Requirements (Non-CM) Questions

10. Are you aware of the new graduation requirements for MD residents that were put into effect for the class of 1989?

11. Have these new requirements had any impact on your applicant pool these past two years?

12. Do students seem to be better prepared academically as a result of the new graduation requirements?

Protocol C.10

Employer Interview Guide

1. Do you hire students from __________ high school? If yes, approximately how many a year? If not, from which high schools do you usually hire students?

2. What do you look for in the students you hire? Do you look at their high school transcripts? Does it matter to you what types of courses the students take?

3. Are you aware of new graduation requirements for Maryland students put into effect for the class of 1989?

4. Do you notice any differences in students who graduated in 1989 or 1990 compared to students' graduating prior to that? If yes, what are these differences? What do you think is the reason for these differences? Could these differences perhaps be due to the new graduation requirements?

5. Have you ever heard of the Certificate of Merit? What do you know about it?

6. Would it make a difference to you when hiring a student whether or not he/she has a CM? Why or why not?

APPENDIX D

TRANSCRIPT CODING FORM

Coding Sheet Data Collection 1989 Graduates

HS____________________
DATE_______________
DATA COLLECTOR_________________________

(1.) Student id number______________________

(2.) Last name _________________________

(3.) First name ________________________

(4.) Racial/Ethnic group:

_____American Indian, Alaskan Native (1)
_____Asian or Pacific Islander (2)
_____Black (Non-Hispanic) (3)
_____White (Non-Hispanic) (4)
_____Hispanic (5)

(5.) Sex:

_____male (1)
_____female (2)

(6.) Attendance Summary:

Grade 9, days absent_________ /present_________

Grade 10, days absent________ /present_________

Grade 11, days absent_________ /present________

Grade 12, days absent_________ /present________

(7.) Coursework:

		Subject	Subject Code	Group	Grade	Credits
9th grade 86-87	9(1)					
	9(2)					
	9(3)					
	9(4)					
	9(5)					
	9(6)					
	9(7)					
	9(8)					
	9(9)					
	9(10)					
	9(11)					
	9(12)					
	9(13)					
	9(14)					
	9(15)					
	9(16)					
	9(17)					
	9(18)					

	Subject	Subject Code	Group	Grade	Credits
10th Grade 87-88	10(1)				
	10(2)				
	10(3)				
	10(4)				
	10(5)				
	10(6)				
	10(7)				
	10(8)				
	10(9)				
	10(10)				
	10(11)				
	10(12)				
	10(13)				
	10(14)				
	10(15)				
	10(16)				
	10(17)				
	10(18)				

grade
88-89

Subject	Subject Code	Group	Grade	Credits	11th
11(1)					
11(2)					
11(3)					
11(4)					
11(5)					
11(6)					
11(7)					
11(8)					
11(9)					
11(10)					
11(11)					
11(12)					
11(13)					
11(14)					
11(15)					
11(16)					
11(17)					
11(18)					

	Subject	Subject Code	Group	Grade	Credits
12th Grade 89-90	12(1)______				
	12(2)______				
	12(3)______				
	12(4)______				
	12(5)______				
	12(6)______				
	12(7)______				
	12(8)______				
	12(9)______				
	12(10)______				
	12(11)______				
	12(12)______				
	12(13)______				
	12(14)______				
	12(15)______				
	12(16)______				
	12(17)______				
	12(18)______				

(8.) CAT

Form	Grade		Percentile	Grade Equivalent
______	8th	Language	____________	______________
		Reading	____________	______________
		Math	____________	______________
		Reference	____________	______________

(9.) SAT

Date (Month/Year)	Verbal	Math
____________________	__________	__________
____________________	__________	__________
____________________	__________	__________

(10.) PSAT

Date (Month/Year)	Verbal	Math
____________________	__________	__________
____________________	__________	__________
____________________	__________	__________

APPENDIX E

SAMPLE SIZES BY SCHOOL

Table E.1

Sample Size of Track Data by School

	CP	CP/Gen	CP/Gen/ Voc	Gen/ Voc	Gen	Total
Fast Track						
Pre	—	24	8	—	69	101
Post	7	70	9	—	16	102
United Nations						
Pre	12	59	27	7	96	201
Post	110	87	34	—	59	290
Urban						
Pre	—	9	21	45	118	193
Post	—	17	14	15	97	143
Middle Class						
Pre	—	37	12	6	53	108
Post	36	31	6	—	34	107
Rural						
Pre	14	12	9	8	17	60
Post	—	16	—	5	11	32
Total	179	362	140	86	570	

CP- College Preparatory **Gen**-General **Voc**- Vocational

Table E.2

Sample Size of Gender Data by School

	Male	Female	Total
Fast Track			
Pre	39	62	101
Post	50	52	102
United Nations			
Pre	101	100	201
Post	152	139	291
Urban			
Pre	91	102	193
Post	56	81	137
Middle Class			
Pre	66	42	108
Post	54	52	106
Rural			
Pre	25	35	60
Post	19	16	35
Total	653	681	

Table E.3

Sample Size of Race Data by School

	White	Black	Asian	Hispanic	Total
Fast Track					
Pre	99	—	—	—	99
Post	92	7	—	—	99
United Nations					
Pre	74	83	22	22	201
Post	143	76	40	27	286
Urban					
Pre	95	93	—	—	188
Post	89	43	—	—	132
Middle Class					
Pre	98	6	—	—	104
Post	98	7	—	—	105
Rural					
Pre	51	9	—	—	60
Post	28	7	—	—	35
Total	867	331	62	49	

Table E.4

Sample Size of Academic Performance Data by School

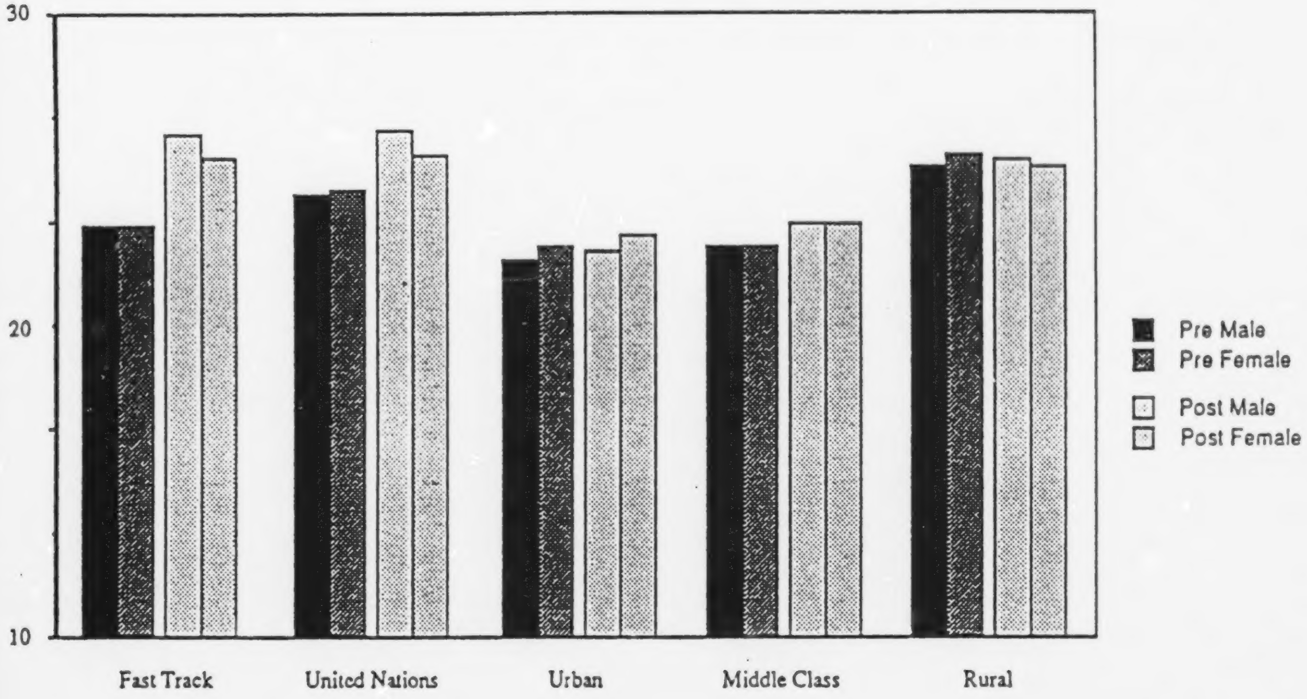
	Low	Medium	High	Total
Fast Track				
Pre	7	44	51	102
Post	27	33	42	102
United Nations				
Pre	44	74	82	200
Post	60	113	115	288
Urban				
Pre	144	44	4	192
Post	107	25	11	143
Middle Class				
Pre	16	47	43	106
Post	19	51	37	107
Rural				
Pre	7	19	33	59
Post	7	10	18	35
Total	438	460	436	

APPENDIX F

STATISTICALLY NON-SIGNIFICANT RESULTS FROM CHAPTER 5

Table F.1

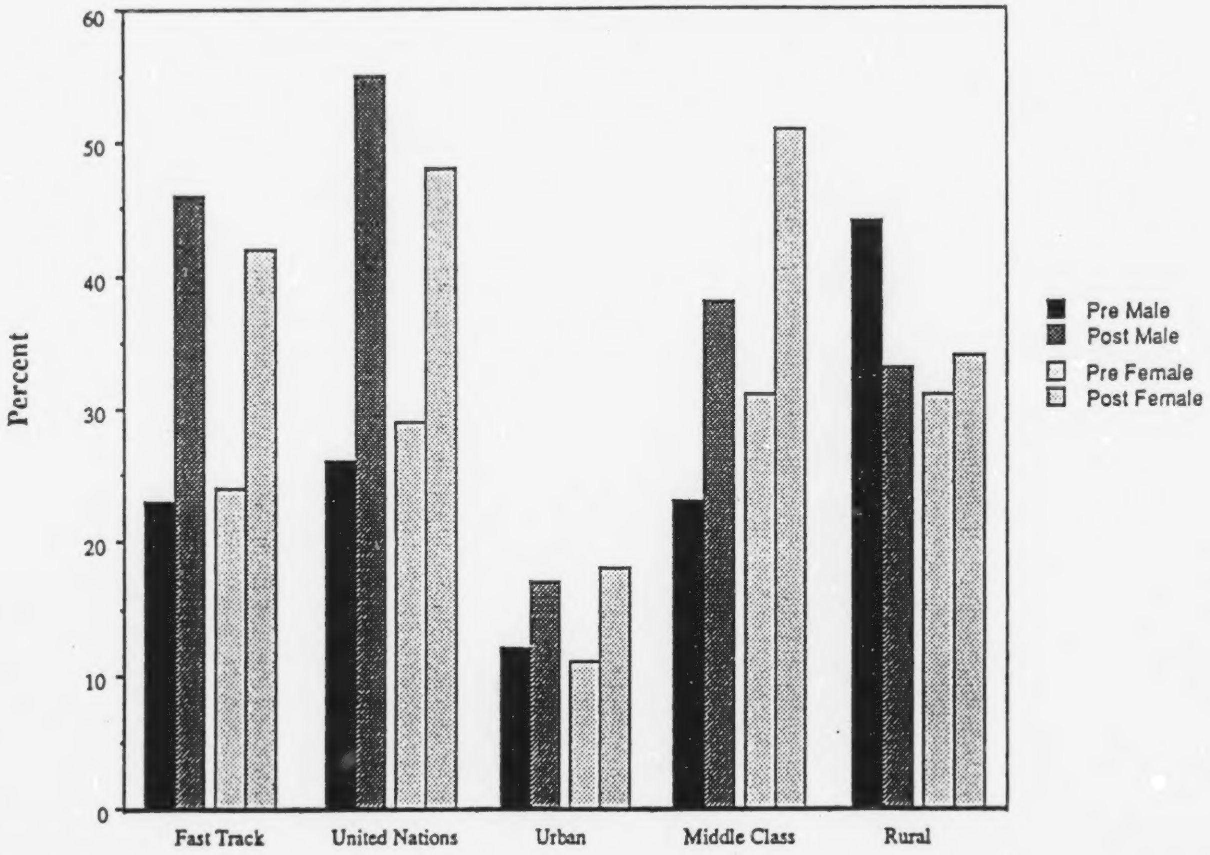
Total Credits Earned by School & Gender



Statistical Effect by Gender: F= 1.1, not significant

Table F.2

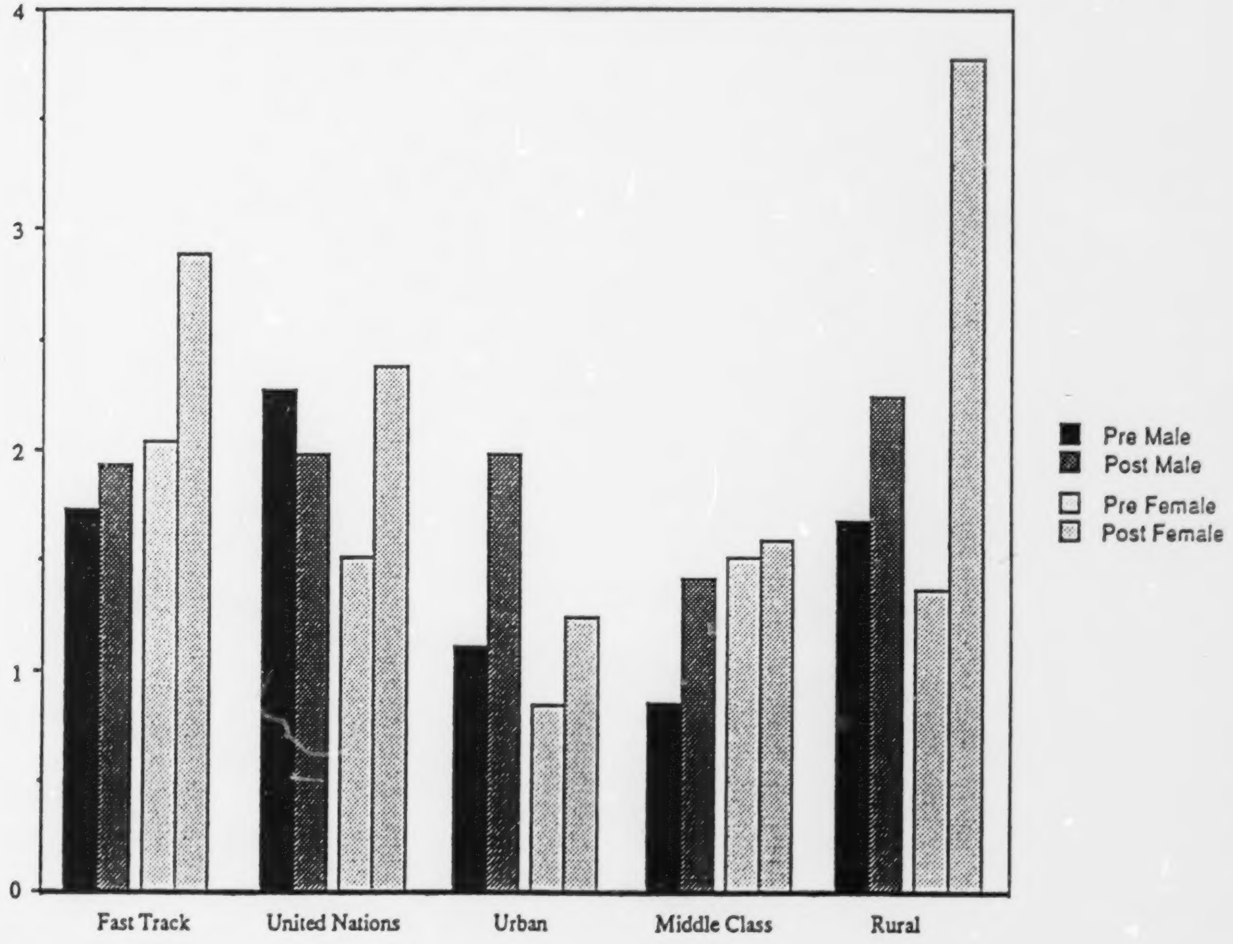
Percent Advanced Courses Earned by Gender



Statistical Effect by Gender: F=.22, not significant

Table F.3

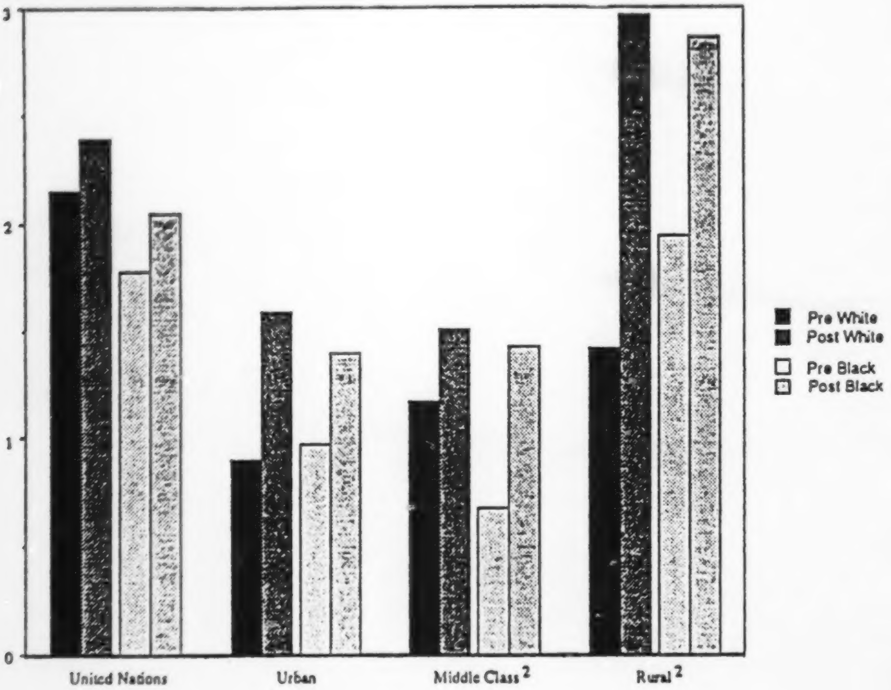
Fine Arts Credits Earned by School & Gender

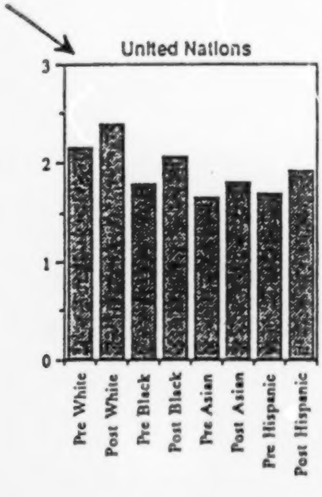


Statistical Effect by Gender: F=0.3, not significant

Table F.4

Fine Arts Credits Earned by School[1] & Race





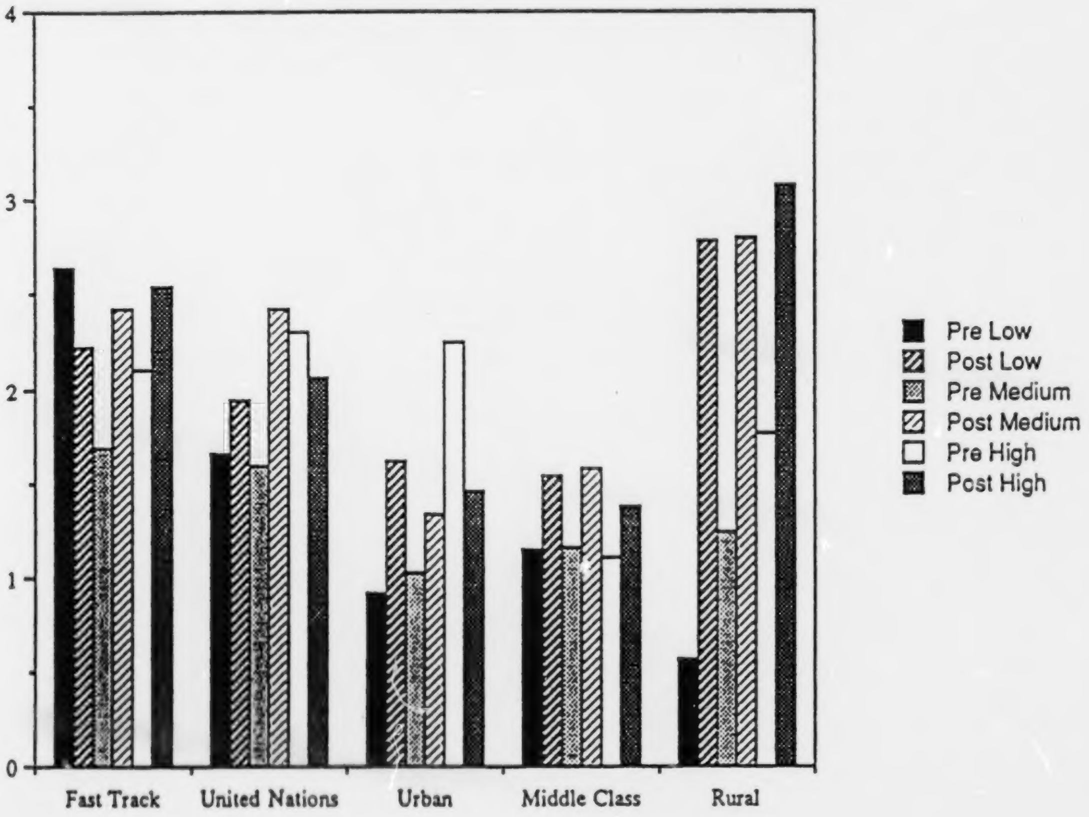
Statistical Effect by Race: F=1.53, not significant

[1] One school, Fast Track, was eliminated from presentations broken down by race because there were not enough non-white students to make comparisons.

[2] The number of Black students in this school is small (between 5 and 10) so comparisons must be made cautiously.

Table F.5

Fine Arts Credits Earned by School & Academic Performance (GPA)



Statistical Effect by GPA: F=1.9, not significant

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